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ON THE MISMANAGEMENT OF PASTURES.

Pastures are more neglected than meadows, and meadows are generally more neglected than fields devoted to grain culture and hoed crops. To obtain a clear idea of the growth of grass, clover, and other herbage for grazing purposes, one needs to study the development of the roots, leaves, and stems, of these forage plants. The first and most important consideration is to have good land on which grass is expected to grow; and if the soil be defective in any particular, the remedy of such defect is the thing to be done in order to make the pasture more profitable to its owner. But instead of correcting existing errors in the management of grazing lands, and enriching them by the application of manure, lime, ashes, and other fertilizers, and by draining where necessary, they are generally about half or a quarter seeded, and then fed so closely that it is literally impossible for the roots of herbage plants to grow to any size, multiply, fill and cover the whole ground. Hence, common pastures present numerous naked spots, and are in the poorest possible condition to withstand the scorching, parching, dry weather of summer and autumn. It is by sheer mismanagement that the grazing lands of the United States yield so little good feed per acre, and are constantly becoming less productive. By comparing the stock kept in Kentucky and Tennessee in 1840, with that returned at the census of 1850, we find a very considerable falling off in quantity, although there are many million acres of fresh lands yet to be subdued which might be used for grazing purposes, in the States named. When we carefully study the statistics of any section of this great Republic, the same sad effects of mismanagement of so-called improved lands meets the eye of the investigator. In 1845, New York contained 11,737,276 acres of improved land; and in 1850, 12,408,968 acres; increase in five years, 671,692. These figures show an average increase per annum of nearly 120,000 acres, giving facilities for keeping a proportionably increased amount of stock, provided the soil was not deteriorated. The number of neat cattle in the State in 1845 was 2,072,330; the number in 1850 was 1,877,639; decrease in five years, 194,691. Why should an increase of nearly 700,000 acres of improved land in the State be attended by a decrease of neat stock of nearly 200,000 head? Is it the increase of horses in the numerous cities and villages? We thought that possibly this might be the case, for horses have largely increased in these places by their rapid increase of population; but when we turn to the tables which show the aggregates, we find that farmers were unable to keep so many horses (we will name the counties at another time) in 1850 as they did in 1845. Notwithstanding the increase in the cities of New York, Brooklyn, Rochester, Buffalo, and other places, the number of horses decreased in the State from 505,155 in 1845, to 447,014 in 1850. This falling off in the rural districts is a remarkable fact, and can only be explained by the sad mismanagement of the pas-

tures and meadows of this great commonwealth. We were indignant when the legislature of 1844 refused to ascertain the number of acres, respectively, in pastures and meadows at the State census of 1845; as we were at the stupid Secretary of the Census Board in Washington, when he thought that it was more important to give the pounds of beeswax produced in Georgia and Alabama, than the number of acres planted in cotton or corn. Two-penny lawyers, who have so long controlled the legislation of this country, and administered its laws, have inflicted on the farming interest a great and deplorable injury. Almost every thing in the line of state and national statistics, which which goes to show the changes in American soil, whether for the worse or the better, has been either neglected or concealed. In 1845, New York produced 2,897,062 pounds of flax; in 1850 only 940,577 pounds. Here is a prodigious falling off of two-thirds of an important crop. The clip of wool in 1845 was 13,864,828 pounds; in 1850 it was only 10,071,301 pounds; showing a diminution of between thirty and and forty per cent. in five years. The decrease in the number of hogs is quite as extraordinary. In 1845 they numbered 1,584,344; in 1850 this number was reduced to 1,018,252; decrease in five years, 566,092. The number of sheep in 1845, in the State, was 6,443,855; in 1850 the number was reduced to 3,453,241; decrease in five years, 2,990,614.

Any failure in grass lands to yield a fair return, whether in pastures or meadows, must tell at once against the cattle, sheep, horses, and swine, mainly dependent on such lands for subsistence; and we have shown from official and trust-worthy statistics, that while nearly 700,000 more acres have been enclosed and improved, every kind of stock kept in New York has largely diminished in quantity. We have often said, and still believe, that about one-fourth of the eleven and a half million acres now under cultivation in New York, is being made more productive, or at least not deteriorated; while eight and a half million acres are damaged to the extent of three dollars per acre per annum by mismanagement. This involves an annual loss to the State of some *twenty-five million dollars.* At present prices of horse flesh, mules, beef, mutton, wool, butter, and cheese, it is no difficult matter, by impoverishing land, to make an acre of pasture or meadow yield three dollars worth of grass a year *less than it might produce.* Comparatively few farmers are willing to admit the fact that they do impair the natural fruitfulness of their pastures, meadows and tilled land; but when we take a considerable district of such farmers together, and liberally concede that one-fourth of their number make adequate restitution to every field, the other three-fourths will be found to have managed so badly as to be compelled to diminish the domestic animals kept in the county. It may be said that instead of feeding so many sheep, cattle, horses, and swine as they formerly did, the cultivators and owners of the soil in New York now have between three and four millions of people to feed. There is some force in this remark, and the idea is suggested to raise the question, whether it is possible to support three or four millions of large two legged animals, and return little of their manure to the land whence their food is extracted, and not seriously impoverish the soil. New York contains a large population in its numerous cities and villages; and we should like to have every man see as we do, that these cities and villages are fast destroying the natural fertility of the land that both feeds and clothes their inhabitants. The United States census for 1840 and 1850, and other official returns made for purposes of State taxation, prove that the pastures of Kentucky and Tennessee have suffered only a little less than those of New York. Ohio and Indiana, Michigan and Illinois, are pursuing the same exhausting practice, but the evidence is not quite so ripe as it is in the older States named, for statistical demonstration. There is a physical impossibility of extracting unlimited quantities of bone earth and potash in grass, to be wasted, and not ruin the land. The last time we passed through the State of Ohio on the railroad from Sandusky to Cincinnati, we saw many tons of hay purchased north of Springfield at three dollars

a ton on its way to New Orleans, Mobile, Texas, and the West Indies. Railroads are aiding powerfully to deplete American pastures and meadows which yield both hay and stock of all kinds in such immense quantities. When will these iron ways begin to carry back from cities and the ocean into the country the essential elements of grass and grain, wool and cotton, to recuperate the long injured farms of the interior? Those that dwell in cities have not the power to annihilate a single atom of matter, and may, if they will, give back a full equivalent for what they consume. But as we do not expect that the idea of restoring the elements of grass to pastures will be adopted by farmers in our time, we shall best promote their immediate interests by showing how close feeding in spring and the early part of summer diminishes the growth of grass one-half, taking the season together.

Close feeding of pastures is nothing more than severe pruning; and it matters little whether one cuts off all the limbs of a tree, or all of its roots—either greatly retards its growth, as may be seen in dwarf hedges, formed simply by close clipping. Estimated in pounds of roots, trunks, limbs, and leaves, this severe pruning diminishes the growth two-thirds or three-fourths. Permit cattle, sheep, and horses to prune forage plants by biting them close at the ground, and all such mutilated plants are stunted for a time; and if the severe pruning is often repeated, the growth of both roots and stems will be reduced to one-fourth of what the land without any manure is capable of producing. By all means allow grass to cover the ground well and get up nearly into blossom, especially if clover, before stock is permitted to feed it severely. In nine cases out of ten, close feeding is unwise; for unless one can irrigate or is favored with genial rains, much time must elapse before the grass can recover and afford good pasturage. Lime, ashes, gypsum, salt, and bone dust all pay well, as a general thing, when applied to pastures as a top dressing in the spring, or fore part of summer. Many pastures and meadows need more grass seed as well as manure. To scarify the surface with a sharp harrow when fertilizers are applied is a capital operation. Make the ground rich, cultivate thoroughly, and no other crop will pay better than good pastures and meadows.

SHEEP BREEDING.

The *Boston Cultivator* of April 16th and 23d, contains an elaborate criticism of an article on "Sheep Breeding," written by P. A. Browne, L. L. D., of Philadelphia, and published in the agricultural part of the Patent Office Report for 1851, which, from the importance of the subject discussed, deserves some notice at our hands.

Our Boston friend commences his "review" by remarking that "the main object of the writer [Dr. Browne] appears to have been to introduce a new classification of sheep in regard to their natural affinities. He divides the common sheep into two species, which he designates as "the *hairy* sheep, and the *woolly* sheep.'

Whatever may have been the object of the author of the essay on "Sheep Breeding," in the Patent Office Report, the following comments of the reviewer strike us as singularly irrelevant:

"The inquiry may be made why we have devoted so much space to the refutation of such wild notions (and we have noticed but a tithe of them) as are contained in Mr. Browne's essay. We reply, the source through which they appear, gives them influence. The government of the United States assumes to give the people valuable intelligence through the medium of the Patent Office Reports. It employs an agent, styled an Agricultural Clerk, to collect and prepare this information. But if the character of these Reports is not what is assumed—if instead of truth they propagate pernicious error—they are an injury to the people and a disgrace to the government. Politicians talk of reform, progress and improvement, and captivate the credulous with these attractive words. Agriculture, the most important of all national interests, ought to receive the first efforts for advancement from the servants of the people. But when the sanction of a government functionary is given

to such absurdities as are put forth in the essay we have been considering, instead of effecting improvement, it encourages miserable humbuggery.

"If any further excuse is necessary to justify the space we have occupied in this review, we might say that the essay in question has already received notices of commendation from papers devoted to agriculture. It is so noticed in the *Southern Cultivator* for May, 1852, in an article headed, 'The Science of Improving Domestic Animals, by DANIEL LEE, M. D.' (It is not improper to mention that the Report of the Patent Office which contains this essay, was published while Dr. LEE was Agricultural Clerk in that department.) Mr. BROWNE'S views have also, we are sorry to say, been highly spoken of by T. C. PETERS, Esq., editor of the *Wool Grower*. (See January number, current vol., of that paper."

The legitimate inference from the above would seem to be, that Dr. LEE ought to have excluded a communication on an important branch of husbandry, because there might be a reasonable doubt whether a natural line can be drawn between sheep on which wool predominates and those on which hair predominates. Such a rule, rigidly carried out, would prevent the making of any agricultural report whatever, or any agricultural paper; for men of intelligence enough to have their own opinions on rural affairs, neither think alike, nor write alike; and they cannot at any agricultural meeting, be forced to talk alike. One man's wisdom is to another folly in the extreme; and without toleration and forbearance, all popular discussion is impracticable.

In the Patent Office Report for 1850, Mr. MARK K. COCKRILL, of Nashville, Tenn., who has some $200.000 invested in sheep and land to keep them on, says: "I have studied this subject thirty-five years [the breeding of sheep] with diligence and devotion, and thought I had come to correct conclusions: but the commissioner, Hon. E. BURKE, decided that I was wrong and most decidedly mistaken in the whole matter." Mr. C. speaks of Mr. BROWNE as a gentleman of science, "who has devoted years to the study of wool and hair;" and, after quoting his microscopic measurements of *sixty-five* samples of wool, eighteen of which came from Europe, and were furnished by Mr. FLEISCHMAN, he adds: "Mr. BROWNE deserves from our wool-growers a service of plate and a suit of clothes from the fleece of 2186, for his investigations on this important subject."

Mr. B. was endorsed not only by the veteran editor and founder of the *Plow, Loom and Anvil* and the Hon. R. R. REED, a large wool-grower and member of Congress from Pennsylvania, but by a number of the most intelligent farmers in Virginia, Maryland, and Delaware. The editor of the *Boston Cultivator* is too *provincial* in his views as to what men may be allowed to say on a purely scientific subject, the physiology of sheep breeding, in a national work on American Agriculture. Agricultural writers in Pennsylvania and Tennessee have as good a right to be heard in a Patent Office Report printed by Congress as any in Massachusetts or New England. Why not?

Mr. BROWNE may be in error; we, certainly, have never "endorsed" his peculiar theory in reference to hair on sheep, or wool on the heads of negroes. What we said in the *Southern Cultivator* in treating of the "Science of Improving Domestic Animals," in which the views of Dr. BROWNE were incidentally referred to, was in condemnation of the too common practice of uniting the extremes of different breeds and species of animals. The mammoth New Oxfordshire or Leicester sheep may be descended from the same original race, as the smallest Saxons or Merinoes; and so may the large cart-horse of London and the Shetland pony; but such extremes are too great for a direct and successful cross between them. Some of the very large Durham stock imported by Mr. CLAY found its way down to Georgia, and was crossed on the small native cattle of the latter State. The issue was anything but satisfactory. Piney woods pastures the year round were sorry ranges for animals whose progenitors had been pampered for many generations on the richest feed in Kentucky and England.

No matter what animals a farmer breeds, he should make good keeping an indispensible element in his system, and aim to realize a steady improvement by small but sure changes for the better. The value of crosses is often over-estimated. We have heard

the largest sheep breeder in the State of New York say, that he had seriously injured his flocks of fine Merinoes by an infusion of Saxon blood of different families; but the way is to keep it as pure as possible, and thus ever breed upward. Probably no man in this country has been more successful in sheep breeding than Mr. COCKRILL, who believes in the theory so vehemently condemned by the *Boston Cultivator*. The letter of Mr. C. will be found in the Patent Office Report for 1850, commencing on page 253. All who believe that the writers for Patent Office documents are incompetent to the task, will best serve the farming interest by inditing better communications, and forwarding them to the Commissioner of Patents, which is the true way to improve the professional character of the reports.

NATIONAL EDUCATION IN THE UNITED STATES.

SPEAKING a common language, living under a common constitution which is the supreme law of the land, and having a common destiny, what is there to prevent our establishing, on the principle of voluntary and cordial co-operation, a wise system of National Education which shall benefit alike the indefinite millions to be educated in common schools, and the indefinite thousands to be instructed in all the higher seminaries of learning? All appreciate the advantages of the most extensive association of political corporations organized as townships, parishes, counties, districts, towns, cities, territories, and states, under the federal government. Churches and religious societies prosper by the joint labors and happy union of vast numbers who often reside thousands of miles from each other, and yet avail themselves of the great American idea which unites the strength and force of millions for the elevation and protection of the humblest citizen of the republic. This principle of national union may be successfully adopted at once by the one hundred thousand intelligent educators in the United States for the improvement of their not-sufficiently esteemed profession. Professors and teachers of every grade have only themselves to blame, if the popular mind regards their services and calling with less favor and consideration than the important interests involved would lead us to expect. The whole art and science of education must be brought before the people in a conspicuous national theatre, like the acts of our leading politicians and statesmen, before the profession of an educator can take rank with that of a general or captain in the army, or a lieutenant in the navy. Men that bury their talents in the ground, court obscurity, and conceal the statistics of popular education in several States, so that it is with the utmost difficulty that the truth can be learned out of their precints, can reasonably expect nothing better than universal neglect and apparent disrespect.

Feeling a deep interest in the multiplication of common schools and libraries, and their improvement in the States where we know they are few in number and poor in quality, we have tried for years to obtain reliable statistical information on this subject, to publish in the Patent Office reports prepared by the writer, in which the facts would have a wide circulation. It is now three years since the U. S. census was taken, and we have yet to see the first table in print relating to the educational institutions of the nation. Those that refer to manufactures, agriculture, commerce, and population, have been given to the public more or less perfect and complete.

Of all the great interests of the American people, that of education is most neglected by national statesmen. Is this condition of things to continue to the end of the present century? We think not. A United States Journal of Education, collecting reliable statistics from all the States and Territories, and carrying the best thoughts and suggestions of the wisest educators in the world into every school, academy, and college in the Union, must ere long be one of the many rich fruits of our progressive mail facilities, and

still more progressive knowledge. The teachers and pupils in Maine, California, Mississippi, and Wisconsin, should hold a regular professional correspondence, so far as to learn the progress of education in each State, the text-books used, the system practiced —its success, advantages, and disadvantages, as developed by experience. Let a united, national effort be made to improve the schools and elevate the masses in every county and district throughout the republic, and an incalculable amount of good may be achieved and lasting honors won. Our country already enjoys a high reputation in Europe for its excellent schools. The *London Chronicle* remarks:

"When we consider what has actually been done in transatlantic England in the cause of education, and compare it with what one of the most advanced of our practical statesmen only dubiously proposed to do in our own England—it is impossible not to be impressed by a deep feeling of the contrast. Let the truth be told. It is not only Lord John Russell who fall beneath the height of this great argument, but the English public in whose name he proposes to legislate. There is no subject on which public opinion has made so little progress as on this. The British mind cannot act freely in this matter. The mist of old prejudice still settles heavily on her. The *idol specus* hover in this twilight. False fears—superstitious alarms—baseless visions of evil—overcast some of our clearest intelligences, and shake some of our firmest minds, whenever the practical problem is proposed. How shall we educate the millions of our people?"

A new spirit has come over the dream of John Bull. The United States are no longer ridiculed and treated with contumely by the leading London journals. They begin to talk familiar of "trans-atlantic England;" they are "impressed by a *deep feeling* of the contrast" between the deplorable lack of popular education in rich and densly populated England, and in comparatively poor and sparsely settled America. The following paragraph is copied from *Dicken's Household Words:*

"It has been calculated that there are in England and Wales 6,000,000 persons that can neither read nor write—that is to say, about one third the population, including of course infants; but of all the children between five and fourteen, more than one-half attend no place of public instruction. These statements—compiled by Mr. KAY from official and other authentic sources, for his work on the social condition and education of the poor in England and Europe—would be hard to believe if we had not to encounter in our every-day life degrees of illiteracy which would be startling if we were not thoroughly used to it. Wherever we turn, ignorance, not always allied to poverty, stares us in the face. If we look in the *Gazette* at the list of partnerships dissolved, not a month passes but some unhappy man, rolling perhaps in wealth, but wallowing in ignorance, is put to the *experimentum crucis* of 'his mark.' The number of petty jurors, in rural districts especially, who can only sign with a cross is enormous. It is not unusual to see parish documents of great local importance defaced with the same humiliating symbol by persons whose office not only shows them to be 'men of mark,' but men of substance. We have printed already specimens of the partial ignorance which passes under the pen of post office authorities, and we may venture to assert that such specimens of penmanship and orthography are not to be matched in any other country in Europe."

There is a greater lack of common school education in the Middle, Southern, and Western States than a New Yorker or New Englander would believe, if he were not personally conversant with the facts of the case. We allude to them only for the purpose of exciting a common and earnest effort to remedy the evil. We look upon all the States as a *unit*, and wherever schools are wanting or defective, there we would labor to raise the standard of popular education, and invite its friends—not in that district alone, but everywhere in the republic—to support it with dignity and success. The strong are morally and legally bound to support and defend the weak when an enemy invades their territory. Our government supports a small army and has provided a powerful militia force of citizen soldiers for this purpose. Military aid is not the only assistance due from one good citizen to another. Good citizens now have a thousand million acres of public lands, and an immense federal income. Shall little or none of this vast public treasure go to benefit the common schools of the several States, as the distribution of the United States Surplus, in 1837, benefitted the common schools of New York?

THE NEAT CATTLE OF THE UNITED STATES AND WESTERN EUROPE.—FROM WHAT PARENT STOCK HAVE THEY DESCENDED?

It is easy to trace the neat cattle and other domesticated quadrupeds of the United States, to their first importation from Europe by early emigrants to this continent. But naturalists are not entirely agreed as to the origin of the ox family described by TACITUS as constituting the herds of the primitive Germans, and the neat stock found in the possession of the ancient Britons when their island was invaded and conquered by the Romans. Long before the creation of man, Great Britain, in its mild, humid climate, possessed peculiar grass-growing capabilities, and was by nature the parent land of numerous graminivorous animals. So early as the newer pliocene formations, in drifts and fresh water formations, "short-horned cattle of an inferior size," as well as the shaggy Bison and mighty Urus (*Bos primigenius, Bojan*), left their remains mingled with those of the mammoth and rhinoceros. Cæsar describes an ox almost equaling the elephant in bulk, which Prof. OWEN, in his work on the "British Fossil Animals," regards as belonging to the fossil family, *Bos primigenius;* and according to some it was the progenitor of our present domesticated cattle. It is more probable, however, that the "small Short-horned Ox," whose bones are found in fresh water formations, which Mr. OWEN calls *Bos longifrons* (long-sculled ox) is the true parent of British cattle. In an interesting paper on the "extinct and existing Bovine Animals of Scandinavia," Prof. NILSSON, of Lund, thus describes the Short-horn Ox of Prof. OWEN: "As far as we yet know it is the smallest of the ox tribe that had lived wild in our portion of the globe; the whole length from the muzzle to the end of the rump bone, he supposes to have been about six feet eight inches; and, from the slender make of its bones, it had rather resembled a deer than an ox. The forehead upwards over the eyes is flattened, with an edge going along the frontal seam, which is most prominent upwards, and ends with a rounded indentation backwards. Between the eyes is a more or less considerable depression, above which there is often a rising, and beneath which lies an incision for the nasal bones, which go right up to the line drawn between the lower borders of the orbits. (Thus the frontal bones are not longer in this species than they are in the Taurus or Urus.) The horn cores are small, cylindrical, short, curved only in one direction forwards; sometimes, though seldom, downwards, in the plane of the forehead. The form of the temporal cavity is, behind, transverse—obtuse; before, oblique—pointed; its hinder part, to the angle above the joint of the underjaw, only one-fourth part broader than the fore part. The anterior palatine apertures lancet-shaped; at the back oblique inward-pointed; the back ones lie between the palate bones; the nape transverse, upwards with a vertical indenting; downwards with a vertical edge over the circular foramen of the nape. The skull of this species varies considerably in size, and even something in form, according to its age and sex. The species, however, is always known by a protuberance upon the upper part of the forehead in front, and an indenting backwards."

This description is somewhat too professional to interest most readers; but we are of the number who believe that the stock-grower and comparative anatomist should unite their knowledge and labors for the advancement of an important public interest; and this has been done in Great Britain for many years with distinguished success. Between the mammoth *Bos primigenius* and *Bos longifrons*, there is another fossil ox, which Prof. NILSSON denominates *Bos frontosus*, whose bones are found in Sweden. From this species, we suspect the hornless Galloway cattle, (some good specimens of which may be seen in Augusta, Charlestown, and Washington,) are descended. The following briefly indicates the distinguishing features of the *Bos frontosus*. The ridge of the occiput rises high in the center convex; the horns, which rest on longer pedicles than among any known species of ox, are short, and directed outward, backward, and

downward, and then bent forward. The size of the skulls denote an animal which, although much less than the enormous and savage Urus,* (*Bos primigenius*) it is yet considerably larger than the *B. longifrons.*

Some have supposed that hornless cattle were called into existence by cutting out for many generations the young horns of calves, until this osseous protuberance ceased to grow on the skull; and this explanation appears not improbable. It is a great mistake to suppose that neat cattle have been changed by domestication, mainly within the last thousand years; although hornless bulls and cows are doubtless of recent origin, say within two or two and a half centuries. At the commencement of his operations in England, CÆSAR tells us in his Commentaries that "the country was well peopled," and that they possessed "*pecorus magnus numerus*," (lib. v. 12) numerous herds of cattle; for *pecus* refers often to cattle as well as sheep. He adds that the natives of the interior seldom trouble themselves with the tillage of the ground, but live on *milk* and fresh meat, and clothe themselves with skins. For ought that is known to the contrary, the people of Great Britain and Germany were pastoral in their habits before the time of ABRAHAM, and in no respect inferior to JACOB in the art of making "ring-streaked and speckled" cattle. We have no doubt that the famous "Wild White Cattle of Chillingworth" were a purely artificial breed produced in an early age, and then during protracted civil wars allowed to become wild in the extensive forests of princes and noblemen. Prof. BELL, in his valuable work on "British Quadrupeds," says: "It appears the ears are more liable to retain color in animals which become white by domestication than any other parts. This is the case as we have seen with the Guinea pig, and it is no less true of the ox and some others." Prof. FLEMING remarks that he never saw an entirely white ox, but that the ears always remained of a different color. In the Chillingworth white cattle this peculiarity still exists. NILSSON alludes to the fact that no strictly wild white oxen are known to naturalists. As these "wild white cattle" are the oldest known fancy stock in Europe, some notice of them before we attempt to trace the origin of the Short Horns, Devons, Herefords, Ayrshires, Galloways, Alderneys, and others, is due to the dignity of the subject.

Early modern history found these white cattle in the "Great Caledonia Forest" which formerly covered the country from Stirling to Athol. In a history written by BŒTHIUS, and published in Paris in 1526, entitled, "*Scotorum Historia a Prima Gentis Origine*," these cattle are described as "*boves candissimos in formane leonis jubam ferentes;*" perfectly white, and having manes like lions. Their flesh is said to have been tough and cartilaginous, and their tempers exceedingly ferocious, and quite untameable. That these white wild cattle of the 15th century descended from a domesticated race, appears from the following historical allusions of an earlier date. In Leges Wallicæ, of "Howell Dda," the Welsh laws of King HOWELL the Good, which date from about A. D. 942, or before the middle of the tenth century, we find an account of the payment of a fine or forfeiture to the crown, in which *a hundred white cows with red ears* were demanded, and a hundred and fifty black, spotted or red ones, considered as an equivalent. Besides the hundred white cows, the offending party was required to furnish "*unum taurus auribus rufis*," (one bull with red ears.)

Mr. YOUATT supplies us with an historical fact which proves that the ancient white cattle of England were domesticated and highly prized. "SPEED tells us that MAUD DE BREOS, in order to appease King JOHN, whom her husband offended, sent to his queen a present from Brecknockshire of *four hundred cows and a bull, all white with red ears.*"

Neither the roast beef of *old* England, nor the breeding of fine cattle there is a modern invention. It has been suggested that the Romans introduced their superior

* Speaking of the Urus, a native of Britain, CÆSAR says: "Great is its strength, and great its speed; and it spares neither man nor beast which it catches sight of; and that the man who killed the greatest number of them even by the pitfall, brings their horns as an evidence of his prowess, and is highly applauded by his countrymen; and so savage is his nature, that though taken never so young, it cannot be tamed."

stock into Great Britain; but there is reason to believe that the natives had better cattle than Italy or the South of Europe could boast, before JULIUS CÆSAR was born. Like most of the States in this Republic, the British Islands and Germany are naturally adapted to all pastoral operations. The live stock of this country, so recently introduced from Europe, is now worth very nearly six million dollars; and if we can induce the American people to study the natural laws by which all domesticated animals are governed, their value may soon be doubled. More attention must be paid to grazing lands and winter forage, and greater care is necessary in propagating only from the best families and races. By rearing none but good animals, and always keeping them in prime condition, a most auspicious change in the neat stock of the United States might be realized in a few years. On the other hand, if no attention is paid to the daily supply of food and water, and none to the principles of breeding, deterioration is inevitable. Our native cattle have in no respect been fairly dealt by; and we insist on the public duty to give them a "fair chance" to win the highest honors as milkers, working oxen, and meat for the table. It does not detract from the just merits of the Devons, or Short Horns, Herefords, or Ayrshires, to maintain the necessity of treating all other neat cattle with equal care and skill for the benefit of the whole community. Speaking in round numbers, the food annually consumed by twenty million head of cattle in this country is capable of yielding in milk and beef a net gain of one hundred million dollars, over and above what is now realized. These living machines, kept mainly to convert grass, grain, and roots into milk and meat, can never be understood and used to the best advantage until they are carefully studied.

THE WANTS OF THE SOIL.

UNDER the above heading the *Connecticut Valley Farmer and Mechanic* contains some sensible remarks prefixed to an extract from a memorial to Congress in favor of appropriating a part of the public lands for educational purposes, and especially to found a National Normal School, which was drawn and presented by the proprietor of the *Genesee Farmer*. As this memorial has never been noticed, we believe, in this journal, the extract is copied from the *Farmer and Mechanic* below:

"At present, not far from three-fourths of the entire labor and capital of the United States are employed, either directly or indirectly, in the great work of robbing the soil of the few things that God placed in it for the support of vegetable and animal life, without making, or pretending to make, any adequate restitution. All tillage is a most unnatural operation, and the matter removed in crops by no means indicates the whole of the loss of the elements of fertility that arated fields sustain. An intelligent wheat-grower in Wisconsin writes to the agricultural department of the patent office, that lands which have been cultivated twelve years, in that new State, now yield but half the annual harvests that they did when first tilled and seeded. An extensive corn grower in Indiana informs your memorialist, that the rich river bottoms of that State now yield only thirty-five bushels per acre, which once produced, with an equal amount of tillage, seventy bushels per acre. Maize being by far the most important crop grown in this country, much pains have been taken to learn the commercial value of the raw material necessarily consumed to form a bushel of that grain; of which over six hundred million bushels are annually extracted from American soil.

"A gentleman in Connecticut writes, that his farm, of some two hundred and fifty acres, has been cultivated two centuries, and consequently has reached what may be regarded as the normal condition of long-tilled earth. He finds it necessary to apply ten cords of compost manure to an acre, to raise forty bushels. The manure costs him

a dollar a cord, and twenty-five cents per bushel of his crop. A corn grower in Virginia has tried many experiments with guano, and finds that one hundred pounds which cost two dollars and fifty cents, will generally add ten bushels to his harvest. The manure, like that used in Connecticut, costs a quarter of a dollar for enough to produce a bushel of corn. Many letters from practical men, of close observation, and large experience, have been received at the agricultural department of the Patent Office, going to show that if one draws not upon the natural fertility of land to form his corn plants, the raw material to make a bushel of corn can rarely be obtained for a less sum than twenty-five cents. There is collateral evidence worth naming, that corroborates this estimate. Long experience in France and Belgium establishes the fact, that the *excreta* from an adult person are worth five dollars a year for agricultural purposes. The night soil obtained from the human species is equal to the production of twenty bushels of corn to each inhabitant; and for the obvious reason, that no animal has the power to annihilate a single atom consumed in its daily food, nor to create one, if needed to prevent starvation. Field laborers at the South consume about thirteen bushels of corn meal, and as much bacon as from ten to thirteen bushels of corn will make, as the yearly allowance to each. Children consume less, but often waste more, than adults. Taking our entire population of 25,000,000 at this time into account, and each consumes, in one form and another, fertilizing atoms drawn from the bosom of the earth, equal to those contained in twenty bushels of maize; showing an aggregate annual consumption of 500,000,000 bushels, which the soil loses as effectually as it would if that amount of grain were cast into the sea every year."

BRITISH AND AMERICAN AGRICULTURE.

(*Continued from Page* 146.)

A. You were asking the other day respecting English cheese making, and the difference between their process and our own. The Gloucester dairy districts I did not visit, but in the equally celebrated "Cheshire cheese" district I spent considerable time. I would here say that many grocers told me that the American cheese was greatly preferred among the poorer classes (or those that eat cheese not as a luxury, but as their principal food) to the best Cheshire cheese. The prices obtained at retail when I was there, were Cheshire cheese, 12 cts. per lb.; American cheese, 13 cts. per lb. I was also pleased to find that the storehouses of many grocers I visited were filled with American *bacon*, obtained principally from Ohio. The sides were large and very fat and when in good condition were of a delightful flavor and much preferred to English bacon. But it was not always in good condition, and for this reason the dealers were a little afraid of large orders. The grocers were strong free-traders and seemed to prefer to sell American cheese and bacon, to that of "domestic manufacture."

B. That argues little for their patriotism, but I suppose they consider themselves as having been grossly injured by the aristocratic land-owners, and now that they begin to feel their power they are not over-scrupulous as to the means employed to retaliate.

A. That is so. But we will not talk of free-trade, I am tired of it. In England you cannot talk for five minutes on *any subject* but what free-trade is dragged in. Thus in the matter of cheese making, I was desirous to make myself acquainted with their process in all its details, but in most cases they mixed up their accounts with descriptions of the good times under "protection" and the miseries they were now suffering under "free-trade," that I could make nothing of them. For instance I would ask, how much do you realize per annum from each cow? They would tell me that they formerly made £15 ($75) per head, but now they were *losing money*. "Free-trade be ruining the farmer," is the universal wail from Land's End to John o' Groat's.

B. Do you suppose they ever made $75 per cow a year?

A. No doubt about it. One of the most intelligent farmers I met with informed me that he averaged $75 each from thirty cows for many years, and even then, under free-trade, he told me—

having taken me into the middle of a large field, and whispering lest any one should hear and tell his landlord—that last year he made $60 per cow. He thought dairying by far the most profitable part of farm husbandry. Cheese then sold for 10 cts., and butter for 25 cts. per lb.

B. Does their system of cheese making differ from our own materially?

A. The farmer that I have just mentioned as making $60 per head from his 30 cows, adopted, in general, this plan:—The cows were milked very regularly at 5 o'clock in the morning and 5 o'clock in the evening. Ususally there were four milkers—the lady of the house, her two maid servants, and one man—with another man to carry in the milk in a large tin kept for the purpose. The evening milk was placed in the dairy, or cellar as it really was, and remained in deep lead vessels constructed somewhat similar to a hopper, with a hole at the bottom so that the milk could be taken out without ladling. The *cream* was skimmed off next morning, and then the milk was placed in the cheese tub and, together with the morning's milk, was made into cheese. The cream was churned once a week. In this way he obtained from 60 lbs. to 100 lbs. of butter per week. I think I have told you that they make "whey butter." Instead of throwing the whey into the hog cistern at once, it is placed in a large old cheese tub for 48 hours. In this time a considerable quantity of cream rises to the surface and is skimmed off and churned once a week. This farmer often had 20 lbs. of whey butter per week. It sold for about half the price of the good butter, or about 10 cts. per lb.

B. That is a good price for such an article. It might do very well to sell, but I should not wish to eat it. It seems to me it must be a mean kind of butter. Did you like it?

A. I did not; and yet it is not so bad as you would imagine. It has a peculiar sweet taste from the large quantity of sugar of milk which it contains. It also contains more curd than common butter, and this gives it a cheesy taste; so what with cheese and sugar it is not of the best quality imaginable.

B. I recollect Dr. M. M. Rogers saying in one of his letters from Europe, in the *Rural New Yorker*, that it was next to impossible to obtain good butter in England, in fact that their butter was white, lard-looking stuff, rancid, full of hairs, and, altogether, an unpalateable grease.

A. That is not so. As a general thing their butter is far superior to ours. Dr. Rogers must have been very unfortunate in his choice of hotels, &c., to have met with such butter. Warren Isham, of the *Michigan Farmer*, judging from his letters, was also equally unfortunate. I like our cheese better than theirs, and some of our butter is as good as theirs, but we have large quantities of it that are very inferior to Irish, Scotch, and English butter, and even to that imported from the continent.

B. At what temperature do they churn their butter and set cheese?

A. About 55° Fahr. when the cream is placed in the churn gives the best quality of butter, though somewhat more labor is required to churn it than if it were a little warmer. They never like their butter to come in less than 40 minutes. The whey butter is longer in coming, for they are particularly careful to churn slowly when the butter is come, and when all that is required is to gather it into lumps. The rennet is usually added to the milk when it is 95° Fahr. This is warmer than is common with our best dairymen, but as they do not scald their curd, as we do here, it may not be too warm. The cooler the milk when "set," the tenderer and sweeter is the cheese. Skim milk, too, should be colder "set" than fresh milk. When the curd is come it is finely broken with an instrument made for the purpose. It is simply a circular tin rim about half an inch wide, interlaced with wire, leaving spaces about an inch square It is attached to a wooden handle and breaks the curd very effectually in a few minutes. After this is done the curd is allowed to stand for some time, till it again becomes one mass. The whey is then removed, the curd cut into squares, placed in a strong cloth and pressed to force as much of the whey out of it as possible previous to salting. Afterwards it is broken up as finely as possible and salted. The curd is then placed in a vat of the size the cheese is required. It has several holes at the bottom and sides to allow the whey to run off readily. A large cloth placed in the vat is then filled with the curd. A fillet of tin three to six inches wide is placed in the vat an inch or so, and the cloth is drawn up straight; the curd is then added, and in this way stands several inches above the wooden vat. The cloth is then lapped over the top; a smooth board is placed on this and the whole is then placed in the press. There it is allowed to remain for a few hours when it is taken out; a clean cloth is placed around it and the cheese is perforated with a skewer and again pressed. The cloths are changed several times, and great care is taken to press out all the whey. The cheeses are kept in the cool,

damp cellar-dairy house for a week or ten days. They are then taken to a dry, dark, airy room, where for some time they require turning every day to prevent their molding on the side next the floor.

B. The practice very generally prevailing in Western New York of making butter only, must be anything but economical.

A. It is a shameful waste. The milk from which we get 100 lbs. of butter contains at least 75 lbs. of casein and 75 lbs. of sugar of milk. I do not know from actual experiment, but I think we should get twice the weight of cheese that we now do of butter. The whey of course is not so good for hogs as the sour milk, but it is nevertheless good food from the large quantity of sugar and lactates it contains.

B. I think we might do as you say the English farmers do—take off the cream that would rise in 12 hours, and then make cheese from the skimmed milk. In this way we should get superior butter and tolerable cheese that would bring five or six cents per lb.

THE RUTA BAGA.—A PROFITABLE CROP.—As the season of planting has come, the question is to agriculturists timely and important, whether the cultivation of roots is not worthy of increased attention. With the hope of directing the attention of my brother farmers to this subject, I will present the result of my experiment last season with the Ruta Baga.

The land selected—one-fourth of an acre—was adjoining that on which I had raised in the preceding year sixteen hundred and sixty-six bushels per acre. Geologically it is primitive, rocks principally granite, and natural timber oak and maple. The soil is somewhat heavy, but free from standing water; it was an old meadow, and had become unproductive; in the preceding year it had been broken up and planted to potatoes. It was cultivated for the Ruta Baga crop by removing all rocks and stones, well manured and plowed as deep as possible with a common plow. After a few weeks it was manured again, and plowed one-half as deep as before, and thoroughly harrowed. Previous to the fifth of June it was plowed and harrowed the third and fourth times. Furrows were then drawn two feet apart, into which were drilled four loads of the richest composition of barnyard manure. The furrow was then replaced with the plow, and on the top of the ridge a slight channel was made with the hoe. In this channel and directly over the manure the seed was deposited by hand some half dozen in a place ten inches apart and covered with a rake. When the plants appeared, all but the best ones were removed. They were carefully hoed at intervals of a week four times, when they became too large to work among without injury. The manure used was sheltered barnyard. They were planted June 20, and gathered early in November. The expense was—

To removing stone,	$1.50
Plowing and harrowing four times,	4.00
Sixteen loads of manure, $8, half charged,	4.00
Forming ridges, raking, and planting,	1.25
Weeding and thinning,	1.50
Hoeing four times,	3.00
Harvesting,	2.00
Rent of land 50 cts., seed 12½ cts.,	0.62½
	$17.87½

I had a large quantity of tops worth $2, and over three hundred bushels of roots at the low price of 16c—$48—making an income from one-fourth acre $50; leaving a profit of $32.12½. The cost per bushel was five cents. JOHN T. ANDREW.—*West Cornwall, Conn.*

CORN.—FLAT VS. HILL CULTURE.—In your last number under the head of "Spring Work," you express a desire to be informed as to the "relative advantages of hilling up corn, or letting it remain as planted, merely keeping it clean by horse and hand hoeing." After experimenting both ways for some time past, I have not the slightest doubt as to which mode is preferable. The planting being in rows at right angles, I simply use the Corn Cultivator crosswise, and thus leave the field mellow and level. This may be done as often as necessary; but, as it is easily done, I do it three times, and at each time let a man follow up with a hoe to repair injuries, which is done in a short time, and also to destroy the suckers at the last time. A ten acre lot can thus be easily and thoroughly dressed very soon, compared with the tedious hoeing and hilling system. It is obvious that this method decidedly economises both *time* and *labor*, as the horse and driver do nine-tenths of it on a walk. But this is not all. The stalk, having but one set of roots (which are long

and strong), shoots up vigorously and well supported, and consequently is not much affected by strong winds; the growth being steady and strong, the yield is more productive; there being no furrows, ridges, or hills, but all on even surface, it is quite natural that this is the true way to resist a drouth. This was abundantly demonstrated the last season, so unusually dry, with my yield.

If it be desirable to seed the field with clover and timothy, or either, it can successfully be done at the last cultivating in July, for pasture or meadow the next season. If this be done, the stalks should be cut off close to the ground in the fall. It is surprising to see the happy effect of this way and time of seeding. I can show a field treated thus the last season, having grass six inches high and looking as rich as an old meadow of two or three years husbandry.

Persuaded that the cultivator ought to be adopted, instead of the old fashion hoeing and hilling system, I am prepared to believe that it will not be long before farmers will have but one opinion on the subject. To become fully satisfied, I think they need but one trial in a fair field. The result will readily establish this way of managing corn, for vigorous growth and yield, for security against the gale, for resisting a drouth, for facility of seeding to grass, and above all, for economy of time and labor. P. J. WAGNER.—*Fort Plain, N. Y.*

ANALYSES OF CLAM AND OYSTER SHELLS.—The following is from *The Plough, the Loom, and the Anvil*, and clearly illustrates why shell lime is found practically to be more valuable for many soils than stone lime.

"MESSRS. EDITORS:—in your January number of the *Plough, Loom, and Anvil*, is a brief notice of the application of oyster shells as a manure for fruit trees. That those who use them may know what they are adding to their soil when they apply them, I here send you for publication their analysis, together with the analysis of the clam shell.

"In the vicinity of the sea-coast, and in the neighborhood of large towns, the common clam and oyster shells are quite extensively used by farmers as a manure. They are sometimes thrown upon the land whole, sometimes previously broken into fragments, and often burned. As a general rule, the latter method may be considered preferable to either of the others.

"Soils, however, containing already a sufficient quantity of lime for present demands, and where the object is merely to compensate for the gradual waste, shells unburned may answer quite as good a purpose as those which have been burned. When used before burning, owing to their compact texture, they are acted upon but slowly by the ordinary agents to which they are subjected, and hence it requires a much larger quantity of them than of burned shells to exert, in a given time, the same degree of influence upon the soil. Unburned, their effects are not materially different—throwing aside the small quantity of animal matter and soluble salts they contain—from ordinary lime stones broken equally fine and disposed of in a similar manner.

"Before burning—omitting the moisture—they are made up principally of carbonates, with a small quantity of organic matter, phosphates, sulphates, and chlorides. The process of burning expels nearly all of the carbonic acid and organic matter, with some of the chlorine, leaving the phosphates, sulphates, and a small amount of chlorides and carbonates. The rest, lime, which makes up nearly the whole, is in a caustic state.

"As the composition of these shells, both before and after burning, may be of some interest, I here give them:

"The common clam shell (*Venus mercenaria*)—100 parts of the dry unburned shell gave of

Silica,	none
Phosphates of lime, iron, and magnesia,	1.250
Carbonate of lime,	69.204
Sulphate of lime,	0.815
Lime, probably combined with organic matter,	13.907
Magnesia,	1.400
Potassa,	1.847
Chloride of Sodium,	6.101
Organic matter,	6.050
	100.574

"The same shell, burned till the organic matter and carbonic acid were nearly all expelled—100 parts gave of

Silica,	none
Phosphates of iron, lime, and magnesia,	1.856
Lime,	78.610
Sulphate of lime,	1.210
Magnesia,	2.078
Potassa,	2.816
Soda and chloride of sodium,	10.386
Carbonic acid,	3.043
Organic matter,	trace
	99.999

"Shell of the common oyster (*Ostrea borealis*)—100 parts of the fresh shell, deprived of water, gave of

Phosphates of iron, lime, and magnesia,	0.842
Carbonate of lime,	86.203
Sulphate of lime,	2.061
Lime, probably combined with organic matter,	6.685
Magnesia	0.338
Potassa,	0.191
Soda and chloride of sodium,	0.690
Organic matter	3.613
	99.973

"The same shell, burned till nearly all the carbonic acid and organic matter were expelled—100 parts gave of

Phosphates of iron, lime, and magnesia,	0.800
Lime,	91.918
Magnesia,	0.560
Potassa,	0.316
Soda and chloride of sodium,	1.144
Sulphuric acid,	2.011
Carbonic acid,	2.060
Organic matter,	trace
	98.799

"From these analyses it will be seen that the shells of the clam contain a much larger per centage of phosphates, magnesia, potassa, and soda, than those of the oyster; while the latter are much the richest in lime and sulphuric acid. Yours, truly, J. H. SALISBURY, *State Chemist.*

"OLD STATE HALL, ALBANY, Feb. 14, 1853."

SOLUBLE SILICA.—The following important item is from the Transactions of the Monthly Council of the Royal Agricultural Society for March:

"Professor WAY, the Consulting Chemist to the Society, reported to the Council the recent discovery, assisted by Mr. MAINWARING PAINE, he had made on that gentleman's property in Surrey, of a natural source of silica, in the state known to chemists as "soluble silica." This deposit was situated in the lower beds of the chalk formation, immediately above the upper green sand, in quantities that would prove inexhaustible; and it was found in many instances to contain no less than 75 per cent. of the soluble silica in question. This substance so unexpectedly found ready-made to hand in nature, would be invaluable in a variety of ways in the manufacture of manure; and he desired an early day for a lecture, if it met with the concurrence of the Council, in order that this discovery might in the first instance, and at once, be laid before the Society, as a link in that chain of investigations which had been originated and carried on under its own direction and at its own charge, in order that by such early announcement its advantages might be secured, free from monopoly, to its members and the agricultural community. The Council thanked Professor WAY for this important communication, and decided that his lecture on this subject should be delivered to the members of the Society in the Council Room on the second Wednesday in March, at 12 o'clock at noon."

UNDER-DRAINING.—At a late meeting of the New York Farmers' Club, Mr. J. N. BLAKESLEE, of Watertown, Conn., gave the following testimony to the great value of thorough drainage:

"I have doubled the crops of my whole farm by drainage. One drain eighty rods long, made of stones picked off of two acres, cost $30, counting the work at a dollar a day, including six rods of lead pipe to bring the water into my barnyard. I have now got water in all but two fields by my drains. I had some dry knolls, situated lower than the land I drained, which were unproductive. Upon these I managed to empty the water of the drains, and now get first rate crops by that mode of irrigation. I put 900 rods of drain into 100 acres. I had 60 acres that would not pasture 60 sheep. The land was covered with bitter brakes; when drained, I sowed southern clover seed, and then cattle and sheep eat clover and young brakes till they killed out all the brakes, and now I get great crops of English hay. I dig ditches two or three feet down to a hard pan and lay a pipe of stones and fill it with small stones. This is far better than open ditches."

FERTILITY OF NILE MUD—The celebrated microscopic philosophor, EHRENBERG, has examined this mud, and finds its great fertility to be owing, not so much to any peculiar mineral contribution, or to the presence of vegetable matter, as it is to the vast accumulation of extremely minute forms of microscopic animals, which by their decomposition enrich the soil.—*New York Farmers' Club.*

The animal matter thus furnished contains a large percentage of nitrogen, and would by decomposition supply that invaluable fertilizer for all cereal crops—ammonia.

AGRICULTURAL MECHANICS.—Mechanical science and arts are doing more for the advancement of agriculture in the United States than all other agencies combined, so far as immediate results are attained. Ultimately, chemistry, physiology, meteorology, geology, and other departments of the natural sciences, will confer benefits on all industrial pursuits far transcending any mere mechanical advantages. Indeed, the most valuable mechanical powers, even now, are more the fruits of intellectual culture than of original genius; and the successful study of natural phenomena precedes nearly all important inventions and discoveries. Operations that have been practiced thousands of years, like those of plowing, weaving, grinding grain, and pumping or lifting water by wind, are seen from an entirely new point of view by the man of science; and he is able to suggest improvements that never could have occurred to a mind not illuminated by the numerous and brilliant lights kindled by modern researches into the laws of matter.

We have been led into this train of thought and remark by perusing in the *Horticulturist* the valuable article on the "Application of Wind as a Power for Raising Water," from the pen of Prof. KIRTLAND, of Cleveland, to which the readers attention is invited in this number. There is a wind-mill which has been in successful operation in the federal metropolis during the last six years; and for what we can see to the contrary, may continue to work well so long as a wind shall blow up and down the valley of the Potomac. The wheel we should judge to be between thirty and forty feet in diameter, and it is all made of iron. One only four feet in diameter would be too small except for pumping a short distance; from six to eight feet would be a cheaper power, all things considered. We should make the flanges of the wheel of galvanised sheet iron or of zinc, and set them permanently at the proper angle to be acted on to advantage by the current of air. By keeping the wheel always in the direct current, if it had any force, the flanges would catch it, and turn the wheel, as a current water-wheel is turned in the Mississippi and elsewhere. Such a wheel with the necessary shaft and crank may be made of iron for a few dollars; and every one can understand from the illustrations furnished by Prof. KIRTLAND, that this simple apparatus will work successfully whenever the atmosphere has any active motion. These current wheels (they are in no sense *mills*) and pumps, if manufactured in a large way, might be sold at prices which would enable every farmer to have a score of them for irrigation, and for the distribution of liquified manure, if he saw fit to make the mechanical power of the winds create wealth for himself and mankind.

With durable and cheap machinery, vast quantities of water may be elevated to any desirable height on every farm, for agricultural purposes; and the thanks of the farming community are due Prof. KIRTLAND for his very intelligible illustration of a simple and useful wheel and crank to be put in motion by wind. The water that falls upon every square foot of ground in a field is equal, on an average, in this country, to 200 lbs. a year; and so much of this as descends deep into the earth and re-appears in wells and springs, always contains both the vegetable and mineral food of plants (dissolved out of the soil in passing through it) in greater or smaller quantities. In rare instances such water is poisoned by an excess of acids, or acid salts.

On the construction and working of pumps we have a word to say: It is not necessary to use two pumps nor a force pump in order to raise water forty or fifty feet, as Prof. K. seems to suppose. Let the stem of the pump stand twenty-five feet above the water, and be connected with it by an iron pipe with a valve at the top of it. Just above this the piston rod descends and works in the usual way of pumping. By creating a vacuum above the twenty-five feet of iron pipe, the water is forced up twenty-seven or twenty-eight feet by the weight of surrounding atmosphere, and two feet above the valve in the piston rod. This rod will, of course, lift the column of water twenty-five feet without difficulty, provided due power is applied to the lever or other geering

that puts it in motion. The same mechanical power that will force up water twenty-five or fifty feet by a *vis a tergo* action, as in a common forcing pump, will lift it by applying the power on the upper side of the metallic or wooden body that raises the column of water. The motion of the body that really lifts the water is the same in either case.

"APPLICATION OF WIND AS A POWER FOR RAISING WATER.—A garden engine, manufactured by Downs & Co., Seneca Falls, State of New York, enabled me to preserve many valuable plants, shrubs, and trees, during the severe drouth of last season. It was equally important as an implement of warfare in a contest I waged with the cherry and pear slugs, and some other depredating insects. The force with which it throws tobacco water, and other medicated washes, is sure to reach those enemies, however securely they may be concealed. Its principles are simple, and the workmanship excellent. No gardener can well dispense with its use.

"To pump from a well the requisite supplies of water was a work of no small labor. It led to the investigation of a method of working a pump by means of the wind. The practicabilty of the plan I am about to suggest, does not remain to be tested by experiment. During former years, a small wind-mill was in successful operation upon the farm of Mr. ANDERSON, five miles west of Ashland, Ohio, on the road leading to Mansfield. It worked a pump that amply furnished a large stock of cattle, which otherwise could obtain no water. Two days only did it cease to perform its duties during more than two years, and that interuption was occasioned by the meddling of mischievious boys. It is still in operation for ought I know. The cost of this simple machine, including pump, did not exceed fifteen dollars.

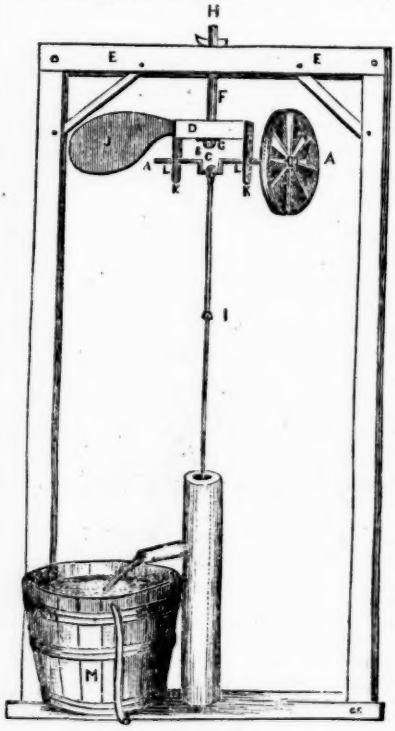


PLATE I.

"By reference to Plate I, the principles on which it was constructed will be at once comprehended. The direct application of the power, without the intervention of any geering or machinery, obviates much friction, hence a small amount only of power is required. The diameter of the wheel should not exceed four feet, a few inches less is preferable. It is firmly fixed by its hub on an iron axle formed of a square inch bar. The sails or buckets are secured, at their outward ends, to a wooden rim, like that of a large spinning wheel. An inch and a half crank is raised on the axle at B, which, at that point, is cylindrical, and upon which is adjusted the upper ends of the piston-rod of the pump C. This, when in motion, of course commands a play of three inches.

"*The body of the Mill.*—A piece of pine plank, D, is suspended from the cross-girt of a frame, E, by an iron bolt, F, furnished at its lower end with a large head, G, and a washer, and secured by a key, H, at the upper end, admitting of an easy circular motion of D around the bolt. This motion is coincident with that of a swivel on the piston-rod, I. The rudder, or vane, will necessarily throw the wheel, at all times, into the wind. The axle, A, is suspended from the body by two straps of iron, through which it passes at I, I, where it is cylindrical without regard to perspective and proportion, but will perhaps illustrate the subject sufficiently.

"A breeze which merely agitates the leaves of the trees will set the machinery in operation. A reservoir of some six or eight hogsheads was kept nearly filled, and when, in windy weather, a surplus of water was raised, it was returned to the well by a waste pipe, M. In the hands of an ingenious mechanic it might, no doubt, be greatly improved. Iron, in some of its parts might be substituted for wood.

"A well, suitably located, will furnish water enough for an ordinary garden, and without labor, by aid of this mill. How much it would improve our flowers, fruits and esculent vegetables, cannot be estimated, but would surely effect a revolution in our present modes of gardening here in the West, where we suffer much every season from drouth. Public tanks, inns, tanneries, and thousands of prairie farms, require its aid. Downs & Co., or some other active firm, would render the com-

munity essential service if they would manufacture a supply of these mills and adapt them to some of their improved pumps.

"In all this, gentle reader, there is no Quixotism. Its feasibility has been amply tested. We may, however, trespass on the peculiar province of the Don, and, like him, get our heads bruised when we give play to our imaginations on this subject. We will venture on the movement.

"Attempts are every where making to ornament and improve country and suburban residences. Few localities are naturally furnished with the means of supplying a *jet d' eau*, yet it is one of the most important ornamental additions art can supply to such places. One of moderate size can be constructed at any point where a well with permanent and abundant springs can be obtained within twenty-eight feet of the surface of the ground. Practically, beyond that depth, this mill will not raise water with much success. It is obvious that the same wind operating on one mill, and raising a given quantity of water twenty-eight feet, would, by acting on a second mill, raise the same water an additional twenty-eight feet.

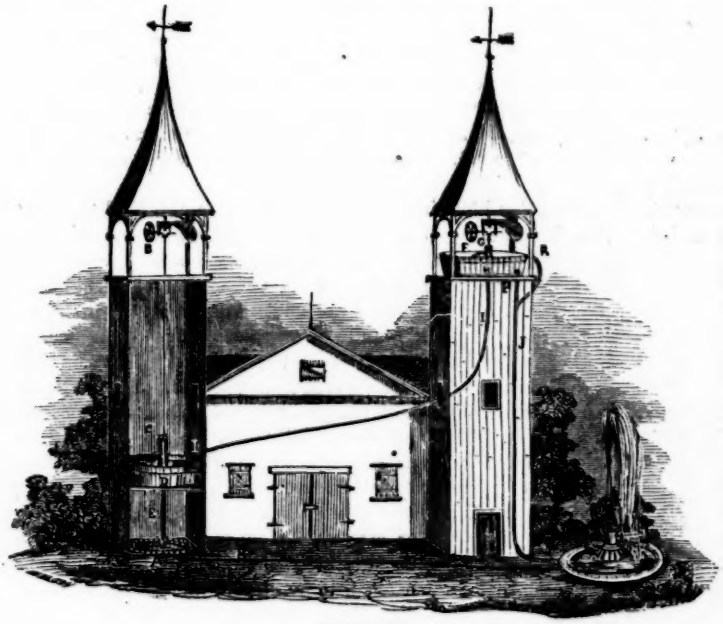


PLATE II.

Suppose an architect should sketch a barn, or other out-building, with two spires or towers of suitable height and dimensions, giving them an air of taste and beauty. The outline I have attempted to supply in Plate II, but not the finish.

A, represents a well, either under or contiguous to one of the spires. B, first wind-mill, working pump, C, placed on the center of a wooden cistern, D, of thirty or forty hogsheads capacity, whose bottom is perforated with pump stem, E, E, extending down into the water in the well. F, second wind-mill, working pump, G, and filling reservoir, H, of similar capacity, from reservoir, D, through a tube I, I. J, J, conducting tube. O, the hydropathic mermaid, cascading dolphin, or any other monster fancy may create. I, stop-cock to let the water on the jet. N, stop-cock to let the water directly into the basin, and not through the jet. The waste water is finally discharged into the well, A, by tube, M. The pressure on the tube, J, J, might be too heavy while the water was not discharging at the basin; stop-cock P would relieve it. The waste water from cistern, H, when full, may be discharged through tube R, into the conducting tube, J, J.

"By these arrangements, sixty or eighty hogsheads of water would always be at command, and at an elevation at which it might be conducted over the dwelling house, lawn, garden, trees, &c. During calm weather it would keep a jet of moderate dimensions in play for several hours, and in windy weather the supply would be constant. On the shores of Lake Erie no day passes without furnishing wind enough to keep the reservoirs replenished. In case of fire they would be equal to an ordinary fire engine.

"Is this Quixotism?" J. P. KIRTLAND.—*Cleveland Ohio.*

Horticultural Department.

CONDUCTED BY P. BARRY.

HINTS ON THINNING FRUIT.

THE prospects of an abundant fruit crop throughout most of the fruit growing regions of this country, have scarcely ever been better, according to the best information we can obtain, than they are the present season. The winter was of more than an average mildness; and the spring, though early, has been cool, without any violent changes likely to affect the fruit buds. At the present moment (May 14th) Peaches, Cherries, and Pears, show a remarkable profusion of blossoms. The temperature is lower than we could wish it to be, and for several nights there has been here a light frost, but owing to the dryness of the atmosphere, it has not, as far as we are able to judge, done any serious injury. Everything looks promising. Last season the crop was very light generally—in many localities a total failure; and this will contribute much to the abundance of this season's crop.

Now we wish to offer a few hints in regard to certain precautions, which the circumstances call for; that is, provided the crop will be as heavy as we have reason to anticipate. It is very well known that in favorable seasons, after a failure especially, trees bear too much. It is very common too see them so loaded with fruit as not only to cease growing entirely, but to bend and break down under its weight. This should be guarded against. Trees are in a multitude of cases enfeebled, broken, contract diseases, and are, in short, *ruined* by excessive bearing; and every man who appreciates the value of a full grown bearing fruit tree, worth from $100 to $500 as the case may be, should guard against such a result as carefully as he would his ox or his horse against excessive labor that would be certain to injure or kill them.

Trees, like animals, have constitutions that can, by proper treatment, be kept sound for a great length of time, or by neglect, or bad treatment, broken down. Our opinion is that the feeble, diseased, and short-lived condition of the peach tree in New Jersey is due, in a great measure, to a greedy or careless system of over-cropping. We know how races of men and horses degenerate, from hard labor and bad treatment—how they dwindle down in size, loose their proportion, symmetry, and intelligence—in short, wear out, to use a very common but expressive term. Trees "wear out," too. How many we have all seen that in their youth, even before they had arrived at a full bearing age and size, began to look old—the branches twisted and knarly, the bark rough and mossy and all covered with small, feeble, ill-formed buds and fruit spurs, loaded perhaps with small, worthless fruit, not worth picking up.

Now those who desire to guard their trees against wearing out, must not be too greedy of a great crop. They must master that natural reluctance we all feel to pick off a portion of the fruit. They must thin them out so as to leave them evenly distributed over the tree, and only so many as can be brought to full and perfect maturity without injury or death to the tree. But we shall be asked, "How are we to know how many we ought to leave or how many to take?" Well, we confess it takes some little skill and experience to thin a crop judiciously, but he who goes about it in earnest will find some indications to aid him. It will not do to thin in all cases alike, because the vigorous tree, in a generous soil, will carry a large crop without injury, and one that would be almost certain death to a delicate or feeble tree having limited resources in the way of *food*, just as a healthy, robust, well fed man can perform a day's work with ease that a weakly, ill fed man dare not attempt. The growth of a tree, the appearance of

its foliage, the length and thickness of its young shoots, afford a very reliable guide as to the vigor of a tree and its ability to bear a heavy crop. Some varieties are naturally moderate and constant bearers, and if kept under good culture might never require thinning, while others bear enormously some years, the fruit actually covering every part of the tree and requiring props and supports to keep it from being torn to pieces. Such trees cannot bear so in successive years, nor can they long remain healthy. Then beside thinning the fruits, good culture must be given them in their fruitful years, and top-dressings of composts in a well decayed state. Garden trees may have liquid manure and mulching instead of top-dressing. Such care as this, not costing much, will not only sustain the vigor and health of trees, but produce large, handsome, marketable fruits. When a tree is loaded to breaking down, one-half or three-fourths of the fruit is worthless, and all the advantage of a large crop is lost.

We consider this subject of much importance to the fruit grower. We know by ample experience that it is. We crop our own trees heavily, perhaps too heavily; but every season we have to perform a thinning process, and we should consider the neglect of it nothing less than the wilful destruction of our trees.

GARDEN AND ORCHARD HINTS FOR JUNE.

Garden crops will now be getting forward rapidly and require clean, thorough culture. An occasional application from the liquid manure tank will be of great service. It should always be applied in the evening. Strawberry beds and dwarf garden fruit trees in full bearing may be greatly benefitted by the same treatment; so may roses, or any other flowering plants in poor soils. Buds and grafts will need looking to, and all shoots from the stock below them rubbed. Tying up may be necessary in some cases. Young trees being trained into particular forms, require frequent attention in the way of pinching to regulate the growth and remove misplaced or irregular shoots.

The first of this month is a good time to turn out bedding plants, such as Verbenas, Petunias, Salvias, Heliotropes, Cupbeas, Lantanas, Veronicas, &c., &c. All these plants produce the finest effects when planted in groups or masses, in figures cut in the lawn. The soil should be mellow and rich, and the plants turned out of pots so as not to disturb the roots, and they will go on and blossom immediately.

Dahlias may be put out now and through the whole month.

Lawns, to be worthy of the name, require to be mowed every two or three weeks at least. No matter how good the foundation in the way of soil and grass, without frequent and *very close* mowing, and an occasional rolling, a lawn is nothing better than a common cattle pasture, in fact not so sightly.

Climbing Ornamental Plants of all sorts require constant care in the way of tying up. The shoots should be neatly and tastefully arranged on the wall or trellis.

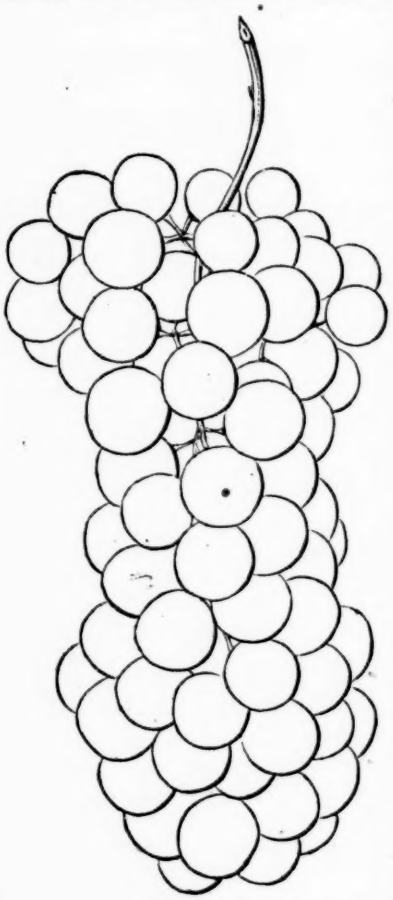
Insects, in all departments, should have an unceasing warfare waged against them. If they once get the upper hand, it is no easy matter to subdue them.

The Curculio.—We hope among the thousand and one experiments being made to discover a *sure and easy* way of combatting this indomitable foe to fruits, some one will be successful. Shake them down and kill them is the most effectual way we know of to-day.

We wish to collect information in regard to the ripening of fruits in different latitudes and localities. Will our friends aid us? Make rough notes of fruits as they ripen, and send them to us.

THE CLINTON GRAPE.

I HAVE now before me (January 25th) a bunch of the above desirable, long-keeping variety, as fresh and perfect as it came from the vine. It has been cultivated in the vicinity of Rochester for the last twenty or twenty-five years; yet it is still but little known, although well worthy of a more general cultivation on account of its hardiness and productiveness. It is *the* grape for the North, where no other variety ripens. Even with us, (latitude 42°,) in backward seasons this is the only variety that attains complete maturity. I would particularly recommend it to wine-makers as worthy of trial. My opinion is, that before many years it will be extensively cultivated as a wine grape.—Judging from the character of its juice, the wine will require a longer time to ripen than that of *Isabella* and *Catawba*, and will keep much longer than either. It succeeds well in all dry situations, and is entirely free from *rot*, to which the *Catawba* is particularly subject.



CLINTON GRAPE.

It is a matter of surprise that the wine-makers of the West, some of whom have been making such active search for native grapes, have not turned their attention to this variety. I have not seen it mentioned in any of their reports. I am informed, however, that it is now in the course of being tested there, and that a quantity of the grapes have been sent from this place to an eminent wine maker, to be tested as to their wine-producing qualities. We may therefore expect a report soon.

The vine grows rapidly, and is propagated easily, striking more readily from cuttings than any other variety I know in the whole catalogue of popular native and foreign sorts. The shoots are slender and wirey, ripening so well as to acquire great firmness, and hence it is so hardy that the severe cold of a northern winter never affects even the softest parts of the young shoots.

Wood—grayish brown, and short-jointed. Leaves—small and thin, sharply serrated, and unlike *Isabella* and *Catawba*, which are usually turned backwards, they have more of a concave form. Bunches—small and compact, resembling much the *Black Cluster*. Berries—small to medium, black, juicy, with considerable pulp, rather acid when first gathered even though ripe. They improve by keeping, just as winter pears will by house-ripening. It is a prodigious bearer, and ripens in equal situations two or three weeks before the *Isabella.—G. E., in Horticulturist.*

Ladies' Department.

ANNUALS, AND THEIR CULTIVATION.

We again resume our descriptions of flowers, and during the season we shall give drawings of such as we may deem worthy. Our pages have thus far been so crowded with answers to numerous inquiries, and other matters that required immediate attention to be of any value the present season, that we have rather neglected the flowers. We shall endeavor to make up for this neglect by especial attention to this department during the season of sunshine and flowers.

The first work is the selection of the ground and its preparation. A warm and sheltered position should be chosen, if possible, as on the south side of a fence; but care must be taken to select a place on which water will not stand. The ground should be deeply dug and well pulverized. If not rich, well rotted manure should be dug in. If the ground is clayey, and liable to become hard by the beating of the rain and the drying sun, some light mold from the woods should be added, or some sandy loam, or mold from an old pasture; one of which can be procured in almost any neighborhood. After the ground is prepared the seed may be sown; but, a little caution is necessary not to sow seed too thick, as beginners generally make this error. As there is some difficulty in sowing the finer seed evenly, they may be mixed with three or four times the quantity of sand or ashes. They may be then lightly covered with fine mold, sifted over them — the smaller the seed, the lighter the covering. It is better to cover too lightly than too heavily.

The Balsam—*Balsamina Hortensis.*—The Balsam, or Lady's Slipper, as it is sometimes called, is well known, occupying a place in almost every garden. It is a native of the East Indies, China, and Japan. It has succulent stems, and beautiful showy flowers. Too much of the seed sold in our seed stores is carelessly saved from improperly grown plants, and the results to the planter is poor single flowers, and sore disappointment. The flowers to be considered good should be large, round, and double. The plant should branch down to the surface of the ground, the flowers completely encircling the stem on all sides. Last season we obtained seed from Vilmorin, of Paris, and we were not only satisfied but delighted with the result. Mons. V. has a variety which he names the *Camellia Balsam*, exceedingly double and fine in every respect. It is from one of these our engraving is taken (fig. 1). Much, however, depends on cultivation.

The Balsam requires a deep, rich, warm soil. Seed may be planted in this latitude about the 15th of May in the open ground; but to secure early flowers, it is better to plant in a hot-bed of moderate heat, or in a cold frame, merely making a box and covering with glass. Seed in this way may be planted about the 1st of April, and by the 1st of May will be ready to transplant into the open ground.

The China Aster—*Aster Chinensis.*—China Asters were first sent from China to Paris in 1730, and have since been carried to all civilized countries. At their first introduction they were single, and of only two colors, red and white. The Germans have taken great pains to improve this flower, and the better sorts are usually called German Aster. The French are particularly fond of Asters, and grow them in the greatest perfection. The flower from which our plate was taken (fig. 2) was grown from French seed, and is called *Pœony Aster.* We were unable to make them ripen their seed, and have since learned that in France the seed can only be ripened under glass.

The culture of the Aster is similar to that of the Balsam. They generally flower better if transplanted than if allowed to remain where the seed was sown.

1. BALSAM. 2. PÆONY ASTER. 3. PORTULACCA.

THE PORTULACCA (fig. 3) is a succulent, spreading plant, that loves the hottest and dryest weather. There are four varieties, the scarlet, crimson, yellow, and white. They grow almost as readily as weeds, and may be sown very early in the spring. We know of few more beautiful objects in the floral world than a bed of the Portulacca.

Editor's Table.

AN AGRICULTURAL COLLEGE IN NEW YORK.—After an effort of thirty-one years to obtain a charter for an agricultural college from the Legislature of New York, the favor has at last been reluctantly granted. What amount of money is appropriated to endow the institution, or what particular plan of education is contemplated, we know not; but we trust that something creditable to New York will be the fruit of so long a delay.

The trustees of the college are JOHN DELAFIELD, HENRY WAGER, WILLIAM KELLY, JOHN A. KING, N. B. KIDDER, JOEL W. BACON, WILLIAM BUELL, TALLMADGE DELAFIELD, ROBERT J. SWAN, and such others as may be associated with them. Perhaps a better selection as a whole could not be made; and we feel confident that whatever can be done, under existing circumstances, to command success and realize the hopes of the devoted friends of agricultural education, will be accomplished.—Many difficulties are to be encountered and overcome before well qualified professors, good text-books, proper anatomical and physiological museums, and a truly scientific and practical school can be seen in this or any other State of the Union. Few men have fairly considered the obstacles which have hitherto prevented the production of any creditable works in the several departments of agricultural science by Americans; and the gentlemen most interested in this last movement in behalf of rural literature and science, in connection with tillage and husbandry, should turn their attention at once to the production of the needful text-books for the use of pupils and teachers. What would a medical college be without good books on anatomy, physiology, materia medica, chemistry, surgery, obstetrics, theory and practice of physic, and other branches of the healing art? No school can prosper without the daily use of suitable books, and such cannot be made in a month or a year by raw hands. A new profession is to be built up from scattered and rudimental elements; and the labor of gathering at one place all the necessary material to form a large and flourishing institution, which shall do honor to a commonwealth that contains a half million of enlightened and independent farmers, is a work of no ordinary character. The farm and grounds are to consist of not less than three hundred acres, and the college buildings should be sufficient to accommodate an equal number of students.

We shall watch and chronicle the movements of this industrial school with lively interest, for the idea of uniting a liberal measure of intellectual and moral culture with a reasonable amount of agricultural and mechanical labor, we have fondly cherished from our boyhood. It is the hope of the masses, the high promise of their freedom and honest toil. But without an earnest, steady, and systematic effort, the people to be benefitted by this agricultural college are doomed to experience another disappointment. They will, however, hold the men who have the matter in charge to a strict accountability. Impossibilities will not be expected, nor asked; but whatever wisdom, industry, and money can accomplish, should be done to place agricultural education on the most favorable footing.

THE UNITED STATES AGRICULTURAL SOCIETY.—The first idea of the organization of this Society originated with the Massachusetts Board of Agriculture, in January, 1851.—*Farmers' Companion and Horticultural Gazette, May*, 1853.

Statements similar to the above, giving the Massachusetts Board of Agriculture credit for originating the idea of the organization of the existing United States Agricultural Society, have frequently been made and not hitherto contradicted. It is due to the truthfulness of history that the error be corrected while the parties are living who know the facts as they occurred. Mr. DELAFIELD, late President of the N. Y. State Agricultural Society, Mr. JOHNSON, its present Secretary, Mr. CALVERT, President of the Maryland State Agricultural Society, Mr. HOLCOMB, of Delaware, author of the Constitution of the United States Society, Mr. F. G. SKINNER, editor of the *Plough, Loom, and Anvil*, Senator RUSK, of Texas, and many others, know that the proprietor of this journal labored to establish the present U. S. Agricultural Society before January, 1851; nor will the distinguished President of the Society, who, as President of the Massachusetts Board of Agriculture, offered the resoluton in favor of a National Society, which was adopted in January, 1851, deny our previous correspondence with him to secure his powerful aid and leadership in the matter. It would be easy to let this correspondence speak for itself, for there is nothing in it but sentiments which reflect the highest credit on Col. WILDER.

It is now thirty-three years since we wrote our first article for the press in favor of an agricul-

tural college in the State of New York, and we have lived to see the Legislature charter such an institution. A bill to charter the U. S. Agricultural Society is before Congress, drawn by the writer, and considerable progress has been made in behalf of a National University worthy of the republic. We wanted a thorough organization of the men of true progress in all the States as a *means* to enlighten public opinion, educate, and elevate the industrial classes. Once properly organized, nothing would be easier than to establish at least a thousand agricultural and mechanical schools, with superior professional libraries, teachers, and all needful apparatus to promote the acquisition of knowledge. To attain this national object, an Industrial University at Washington, uniting the highest grade of science with the most advanced practice in the arts of tillage, husbandry, horticulture, manufacturing, mining, and civil engineering, for the education of educators, is indispensable. The University at Berlin has one hundred and twenty professors; and yet Prussia is a small nation in comparison with this republican empire. How long is it to be cursed with personal and sectional jealousies to the universal neglect of education, its highest and most enduring interest?

Saxon Merino and Cross Breed Sheep.—The Executive Committee of the N. Y. State Agricultural Society have adopted the following regulations in regard to fine wooled sheep, in hopes that greater justice will be done to exhibitors than heretofore, and the true merits of the sheep exhibited be more satisfactorily ascertained:

Requirements.—The number of Ewes to be exhibited for premiums to be *five*, and they must each have suckled a lamb the present season.

1. The fleeces must be sent to the Secretary, at the Agricultural Rooms, Albany, immediately after shearing, with the private mark of the owner, and a mark placed upon each sheep corresponding with that sent to the Secretary, and a lock of wool left on each sheep. The Secretary to record these marks in a book provided for the purpose, and to be shown to no person until the fleeces are produced at the Fair.

2. A statement must also be sent, containing the age of each sheep; how they have been kept; the date when shorn, and that the fleece was but one year's growth; the length of time after washing when the fleece was shorn: and that each Ewe had suckled a lamb up to the time of shearing.

3. The Middlesex Mill standard for assorting the fleeces to be adopted. The Secretary is to send each fleece to the assorter, marked by him, to be weighed, examined, and noted as to its various qualities.

4. The fleeces to be carefully cleansed, dried, and weighed and each fleece to be put up separate and returned to the Secretary with the assorter's report.

5. The sheep to be exhibited at the Fair, and to be examined by the judges.

6. After the judges have examined the sheep, the fleeces are to be submitted to them, with the report of the assorter, and with the private marks sent to the Secretary, when the judges will make their awards.

Each exhibitor must present an affidavit to the Secretary for the use of the judges, that the sheep exhibited are the same that the fleeces were taken from which were sent to the Secretary for being assorted and examined, and that the statement furnished by him to the Secretary is in all respects correct.

Bucks.—The same rules as to shearing and marking, and statements as to age, feeding, &c., will be required—to be verified in like manner.

Improvement of Horses.—We learn that L. G. Morris, Esq., President of the New York State Agricultural Society, and Mr. Francis Morris, of Westchester, purchased at the sale of Mr. Gibbons the celebrated race mare "Fashion," with a foal at her foot by "Mariner," for $1,550. Fashion will be bred to Mr. Burnet's celebrated imported horse "Consternation" this season. No other branch of stock-rearing pays so well as that of producing first rate horses; and we are happy to know that gentlemen of the skill, judgment, and means of the Messrs. Morris are giving to the business a share of their attention.

Sale of Blood Horses.—The large stock of blood horses belonging to the estate of the late Wm. Gibbons, was sold at auction on the 3d inst., at Madison, N. J. Among the number sold was the celebrated racer "Fashion," now 17 years old, bought by Mr. Morris, of Morrisiania, for $1,550. "Bonnets o' Blue," mother of "Fashion," 26 years old, brought $100. "Patsey Anthony," 13 years old, $280. "Mariner," 17 years old, $270; and others of lesser note at prices varying from $70 up to $620. This sale attracted a large concourse of people from Newark, New York, and other places.

The Connecticut Valley Farmer & Mechanic.—We have received the first number of a monthly journal with the above title, published at Springfield, Mass., at fifty cents per annum, by Samuel Bowles & Co., and edited by Wm. B. Calhoun, who is well qualified to make a valuable paper.

Inquiries and Answers.

Rotten Potatoes not always Lost.—During the harvest of 1851, I was looking over an oat field belonging to a friend, in Waukesha Co., Wis., and saw a most remarkable difference on one part of the field in the color, strength and quality of the oats. Upon inquiry, I ascertained that potatoes had grown there the previous summer. A part were dug before they were ripe; in the other part of the field they became diseased and rotted on the ground. Where the latter was the case, more than a double crop of oats was the result the next year.

The soil is a black sand mixed with some little muck or marl. The season that summer (1851) had been rather dry. Please explain this in some future number. Mark Seaver. —*Waterloo, Jeff. Co., Wis.*

The reason why the diseased potatoes so much increased the oat crop is very evident: the unripe potatoes that were dug and removed from the field, carried with them a large quantity of organic and inorganic matter which they had obtained from the soil. Their removal, therefore, to some extent impoverished the soil of the food

of plants; hence the following oat crop was light. On the other hand, the part of the field on which the potatoes rotted received an additional quantity of *available* organic and inorganic matter; in other words, the rotted potatoes were a good manure, and hence the oat crop was much increased.

We have several times witnessed similar results to the above, where a part of a field of turnips have been allowed to rot on the land and the other part carried off. We would not, however, be understood as recommending growing potatoes and turnips and then allowing them to rot on the land for manure. We believe that if the potatoes, turnips, &c., are fed to hogs or cattle, and their manure returned to the soil, the benefit to the succeeding crop would be nearly as great as though they had rotted on the land.

THE VALUE OF MILK.—BEANS.—Please inform me through your valuable journal, whether it would pay to buy milk at two cents per quart, churn it, and give the milk to hogs? Would I realize any profit by so doing?

Can beans be used, profitably, in any way for hogs? and if so, what way would be best? WM. BARRETT.—*Bedford Station, West, Co., N. Y.*

The first question involves a number of others affected by a variety of circumstances. What is butter worth with you?—if half a dollar per pound, it could scarcely fail to pay you well. Then again, much depends on the quality of the milk, and this is affected by numerous circumstances—such as the distance from the time of calving, the quality of the food, the age and breed of the cows, and the time and frequency of milking. If a cow is milked thrice a day you will obtain more milk, but it will be of a poorer quality than when milked only twice; much more is this the case when only milked once in twenty-four hours. The influence of breed alone upon the quality of the milk is well illustrated by the result of a series of trials made at Bradley Hall, in Derbyshire. During the height of the season, and when fed upon the same pasture, cows of four different breeds gave per day—

Breed.	*Milk.*	*Butter.*	*Or 1 lb. of butter was yielded by*
Holderness,	29 qts., and	38¼ oz.	12 qts. of milk.
Alderney,	19 "	25 "	12 "
Devon,	17 "	28 "	9¾ "
Ayrshire,	20 "	34 "	9⅓ "

But even from cows of the same breed the milk contains a very variable quantity of butter; thus, four cows of the Ayrshire breed, feeding in the same pasture, produced, in one week, the following:

	Milk.		*Butter.*
A,.....	84 qts.,	which yielded	3½ lbs.
B and C, each,.....	86 "	" "	5⅛ "
D,.....	88 "	" "	7 "

Twenty-four quarts of A's milk were required to yield one pound of butter, while of D's, twelve and a half quarts only were needed.

We give these results to show that the amount of butter that milk will yield is not very definite. A fair estimate, from all we know on the subject, would be 12 qts., or about 25½ lbs., of milk for each pound of butter.

The value of the butter-milk as food for swine, is easily ascertained theoretically. Thus, 100 lbs. of milk contains about 4 lbs. of cheese and 4 lbs. of sugar; 1000 qts. would therefore contain 52 lbs. of cheese and 52 lbs. of sugar of milk. The same amount of nitrogenous matter would be obtained in two bushels of peas. Of the non-nitrogenous matter, (starch, sugar, &c.,) the two bushels of peas would contain more than the 1000 quarts of milk. So that we shall not be far out of the way, in estimating two bushels of peas equal to 1000 quarts of buttermilk in nutritive matter. The calculation, therefore, will stand as follows: 1000 quarts of milk will yield 83½ lbs. of butter, and butter-milk equal to two bushels of peas. Affix the prices obtained in your neighborhood for butter and peas, and judge of the economy of giving two cents per quart for milk.

Prof. MAPES says that four bushels of lime slaked with the pickle or brine of a bushel of salt, well mixed with a cord of decayed tan-bark, makes an excellent manure. What I want to know is, if this compost is used for bedding my horses, will the lime which it contains serve to fix or to set the ammonia free? Prof. BLISS, of the University at Lewisburg, gave me, as his opinion, that it would fix the ammonia. I do not wish to tax you with any process of reasoning on the subject, but merely to say whether, in your opinion, MAPES' compost will serve to fix or to set the ammonia free. I have a tannery and a worn-out farm. Correct information would be of great service to me. J. D. CHAMBEERLIN.—*Buffalo Cross Roads, Pa.*

Four bushels of lime cannot all be combined with the chlorine in a bushel of salt, so that there would be an excess of calcareous matter which would operate to liberate ammonia instead of fixing it in manure. Use tan-bark unmixed with lime for bedding; and its acids and porous texture will retain ammonia and other fertilizing gases. The lime, salt, and refuse bark compound, named by Mr. MAPES, is a fertilizer of considerable value, to be applied directly to land. It is only under peculiar circumstances that lime will decompose common salt; or that gypsum will deodorize night soil or other manure, as we have ascertained by a score of experiments.

Swamp muck, like tan-bark, develops an acid reaction, and therefore it is a capital material for bedding horses, swine, cattle, and sheep, whose excrements develop an alkaline, or ammoniacal reaction. To save this volatile alkali in manure

is an object of great importance, which may be done with such organic substances as straw, forest leaves, tan-bark, and muck; and also by dry loam and clay.

STRETCHES IN SHEEP.—Seeing an inquiry in the last number of the *Genesee Farmer* asking if there was such a disease as the stretches in sheep, I answer, there is. We have had several cases of it. An old friend of father's told him the disease was occasioned by their inwards knotting together. When you first see them stand, stretching, catch them and take them up by their hind legs, raising them their full length from the ground; then give them three or four smart jerks up and down; then give them some salt, and in ten minutes give them some tar, and if they will not lick it themselves put some in their mouth and hold it in till it is dissolved. I know this to be a good remedy, for we have tried it and they always got well in two or three hours.

I am not quite fifteen years old, but I thought this remedy so useful that I would send it. JAS. PURDIE.—*Columbus, Chén. Co., N. Y.*

HORTICULTURAL.

THE APPLE TREE BARK-LOUSE.—Summer before last I noticed a large number of bugs, about the shape of the common lightning bug, only three times as large, upon my young apple trees: since then many of the trees are covered with a small thing, in form of eggs, as in the specimen I inclose. I send it to you in hope that you may recognise the *beast*, and be able to give the antidote to his ravages. It seems to blight all the trees upon which it appears, and almost entirely prevent their growth. If you will be so kind as to advise me in reference to this matter, you will confer a great favor.—ALBERT VAN VOAST.—*Schenectady, N. Y.*

This is the troublesome insect called the Apple Tree Bark-Louse. We annex a sketch of it, and quote the following from HARRIS' excellent Treatise on Insects:

"Young apple trees, and the extremities of the limbs of older trees are very much subject to the attacks of a small species of bark-louse. The limbs and smooth parts of the trunks are sometimes completely covered with these insects, and present a very singularly wrinkled and rough appearance from the bodies which are crowded closely together. In the winter these insects are torpid, and apparently dead. They measure about one-tenth of a inch in length, are of an oblong oval shape, gradually decreasing to a point at one end, and are of a brownish color, very near to that of the bark of the tree. These insects resemble in shape one which was described by REAUMUR* in 1738, who found it on the Elm in France, and GEOFFROY named the insect *Coccus arborum linearis*, while GMELIN called it *conchiformis*. This, or one much like it, is very abundant upon apple trees in England, as we learn from Dr. SHAW† and Mr. KIRBY;‡ and Mr. RENNIE§ states that he found it in great plenty on currant bushes. It is highly probable that we have received this insect from Europe, but it is somewhat doubtful whether our apple tree bark louse be identical with the species found by REAUMUR on the Elm: and the doubt seems to be justified by the difference in the trees and in the habits of the insects, our species being gregarious, and that of the Elm nearly solitary. It is true that on some of our indigenous forest trees bark lice of nearly the same form and appearance have been observed; but it is by no means clear that they are of the same species as those on the apple tree. The first account that we have of the occurrence of bark lice on apple trees, in this country, is a communication by Mr. ENOCH PERLEY, of Bridgetown, Maine, written in 1794, and published among the early appers of the Massachusetts Agricultural Society.‖ These insects have now become extremely common, and infest our nurseries and young trees to a very great extent.—In the spring the eggs are readily to be seen on raising the little muscle-shaped scales beneath which they are concealed. These eggs are of a white color, and in shape nearly like those of snakes. Every shell contains from thirty to forty of them, imbedded in a small quantity of whitish friable down. They begin to hatch about the 25th of May, and finish about the 10th of June, according to Mr. PERLEY. The young, on their first appearance, are nearly white, very minute, and nearly oval in form. In about ten days they become stationary, and early in June throw out a quantity of bluish white down, soon after which their transformations are completed, and the females become fertile, and deposit their eggs. These, it seems, are hatched in the course of the summer, and the young come to their growth and provide for a new brood before the ensuing winter.

Among the natural means which are provided to check the increase of these bark lice, are birds, many of which, especially those of the genera *Parus* and *Regulus*, containing the chickadee and our wrens, devour great quantities of these lice. I have also found that these insects are preyed upon by internal parasites, minute ichneumon flies, and the holes (which are as small as if made with a fine needle), through which these little insects come forth, may be seen on the backs of a great many of the lice which have been destroyed by their intestine foes. The best application for the destruction of the lice is a wash made of two parts of soft soap and eight of water, with which is mixed lime enough to bring

* Memoires, Vol. IV., p. 69, plate 5, figs. 5, 6, 7.
† General Zoology, Vol. VI., Part I., p. 196.
‡ Introduction to Entomology, Vol. I., p. 201.
§ Insect Transformations, p. 92.
‖ See papers for 1796, p. 32.

it to the consistence of thick whitewash. This is to be put upon the trunks and limbs of the trees with a brush, and as high as practicable, so as to cover the whole surface, and fill all the cracks in the bark. The proper time for washing over the trees is in the early part of June, when the insects are young and tender. These insects may also be killed by using in the same way a solution of two pounds of potash in seven quarts of water, or a pickle consisting of a quart of common salt in two gallons of water."

I have some seed of the Red Cedar which I wish to put in this spring, and having carefully examined the back volumns of the *Genesee Farmer*, "Downing's Fruits and Fruit trees of America," and your "Fruit Garden," and finding nothing in regard to raising Red Cedar from the seed, you will confer a favor by giving instructions in the next number of the *Genesee Farmer*. LEWIS B. WYANT. *Bonus, Ill.*

If seeds of last year, bury in earth for one year, and then sow in light, dry, loamy soil.

My husband would like to know how to save, and when to plant or sow, strawberry and blackberry seed. JULIA SPEARS.—*Brookfield, Wis.*

Take ripe berries, press the juice out of them, dry the pulp, and sow it immediately in pots or boxes of very light, sandy earth, or in an open border of such composition; cover lightly.

Roanoke.

THE Short-Horn Bull, "Roanoke," bred by John S. Clark, of Mentz, and purchased of John M. Sherwood, of Auburn, will be kept the present season on the farm of HENRY FELLOWS, three-quarters of a mile north of Sennett village, N. Y.

Said Bull is pure Short-Horn. His pedigree can be seen by applying to the owner.

TERMS—$5 a Cow.

ALSO, FOR SALE, a Yearling Bull, color Red and White, sired by "Old Splendor." This Bull will serve Cows, if desired, while kept on the premises.

June, 1853—1t* HENRY FELLOWS.

HARVEST IMPLEMENTS.

MOWING and Reaping Machines of different patterns, and of the best kinds in market.

Scythes, Snaths, Cradles, and large Hand-rakes, made expressly for raking after the cart; also, Horse Hay Rakes.

Pitchforks, very superior, of elastic steel.

Threshing Machines and Fan Mills, combined or single.

Horse Powers of the most approved kinds, such as the Endless-chain or Railway, Circular, Cast Iron, &c.

Ruta Baga, Turnips, Cabbages, and all other sorts of field and garden seeds. R. L. ALLEN,

189 and 191 Water street, New York, Ag'l Warehouse.

June 1, 1853.

French Zinc Paint.

THIS new and beautiful article of Paint is now offered to the trade and public, ground in prepared linseed oil, for the first time in this country. It has been used successfully in France for the last five years, where it has superseded white Lead as a paint.

The French Zinc when properly prepared and used, makes the most brilliant and durable white in use, and is entirely free from all poisonous qualities.

The French Zinc is not more expensive than white lead, and is prepared in such a manner that it requires no farther preparation for use, than to thin it with Turpentine or raw Oil to the consistency of white lead paint.

The French Zinc is very much whiter, and has a better body, than the New Jersey Zinc.

The French Zinc is offered dry, and prepared as above, in quantities to suit purchasers, at the Manufacturer's Depot, No. 17 Buffalo st., Rochester, N. Y.

July, 1852, M. F. REYNOLDS.

McCORMICK'S REAPING AND MOWING MACHINE FOR 1853.

FROM the well known reputation of my Reaper in the hands of more than 700 farmers, and that it has maintained its high superiority wherever it has been fairly tested—having again, after a nine days' trial with Hussey's in England at the last harvest on the Royal Agricultural farm, which was the most extensive trial ever made with Reapers in any country, been declared by the able jury of English farmers as decidedly the best machine in every respect, and recommended to the farmer's of England as one on which they may safely rely to cut their harvest, and which since that time has been *greatly improved*, and its capabilities as a mower thoroughly tested, and which I am now prepared to warrant superior to any other, both as a Reaper and as a Mower—further testimonials of its superiority can hardly be necessary.

That Seymour & Morgan, Mamma, and others, are making and selling *my machine, altered, much to its prejudice*, with the hope of avoiding the responsibility of infringing my patent, is the best evidence of the superiority of my own. They will be held responsible, and arrested in their course as soon as the law which is sure can reach them. Those purchasing and using their machines become liable with them.

To convince any responsible farmer (who is in doubt which is the best machine) of my confidence of the superiority of my own, I will permit them to take one of mine with one of Hussey's or Burrall's on trial, to keep the one preferred; and am ready to submit to the same test such points in other machines, claimed as improvements, that are not my own.

The new improved Reaper and Mower will be forwarded to any part of the State or Canada, if ordered before the stock on hand is exhausted, of THOS. J. PATERSON, Rochester, Office No. 6 Burn's Building. Price $110 cash, or $30 on delivery and $85 on time, and $25 cash extra for mowing attachment, or $30 on time. Subject to freight from Buffalo.

Some few reapers of last year, an excellent article, can be had at $100 cash and $105 on time.

For further particulars see handbills.

Rochester, May 20, 1853.

CAUTION!

Ketchum's Patent Mowing Machine.

THE public will take notice, that in 1847, Letters Patent were granted to Wm. F. Ketchum for improvements in Grain and Grass Harvesters, and re-issued on the 26th day of April, 1853, (for claims, a copy of which is given below.) That the undersigned are owners of said Patent right for the whole United States, except Wisconsin, and will cause legal proceedings to be instituted against all persons who shall make, sell, or use, machines in violation of said Patent. The public will further take notice, that no privilege to use these improvements have been granted to any one except the right to use them—for the purpose of cutting grain only—in the Reaping Machines known as the New York Reaper, manufactured by Messrs. Seymour, Morgan & Co., of Brockport, N. Y.

The attention of the public is particularly called to the Machines manufactured by E. B. Forbush & Co., of Buffalo, and John Adriance, of Poughkeepsie, N. Y. These Machines are a direct and palpable infringment of our Patent, therefore any person making, selling, or using said Machine in any of the United States, except Wisconsin, must expect to be dealt with to the full extent of the law.

HOWARD & CO.

CLAIMS.

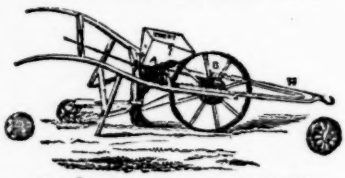
First. Placing the cutter bar and cutters lower than the frame of the Machine, and opposite the side of the plane of the wheel, in such a manner as to leave unobstructed space below the frame, and also between the wheel and the cutter, with their supports to allow the machine to pass freely and without clogging over the cut grass or grain, as set forth.

Second. Placing the cutters lower than the frame and axle and in or nearly in the same vertical plane with the axle, on which the frame hangs and vibrates, and parallel or nearly so, to said axle, so that the vibrations of the frame, on uneven ground, shall not materially elevate or depress the cutters, as set forth.

Third. The endless chain of cutters in combination with the guard teeth, as described.

Buffalo, June 1, 1853.—1t.

HALLOCK'S Ag'l Warehouse and Seed Store.
No. 24, Exchange street, Rochester, N. Y.



[Emery's Corn Planter and Seed Drill.]

THE subscriber, late from the establishment of Emery & Co., manufacturers at Albany, where he has been engaged for the past six years, has been appointed their SOLE AGENT in Rochester and Western New York, for the sale of

Emery's celebrated Railroad Horse Powers and Threshing Machines; Circular and Cross-cut Saw Mills, Feed Mills, Corn-stock and Hay-Cutters, &c.

adapted to the Bower, and now offers them at manufacturer's prices, with the transportation added, and subject to the warrantee, as follows: "To work to the satisfaction of purchasers as represented in circulars and catalogues, or to be returned within three months, and full purchase money to be refunded." The attention of farmers is solicited, and a careful investigation into the construction of this Power and its comparative merits, as well as price requested, before purchasing elsewhere. He is also agent for their

COMBINED REAPER AND MOWER,

and keeps constantly on hand Plows, Hay-Cutters, Corn Shellers, Seed Planters, &c., &c., comprising a complete and extensive stock of Agricultural and Horticultural Implements generally, together with a full assortment of Field and Garden Seeds, of the best Imported and Shaker growth.

He is also agent for the sale of Seymour's Grain Drills and Broadcast Sowers, Wheel Cultivators, Gang Plows, Clover Hullers, Cider Mills, Clover Gatherers, Horse Rakes, Scythes and Snaths, Hand Rakes, Grind Stones, &c.

He will be prepared to furnish dealers with Drum and Taylors's well known Scythes; also Manure, Straw, and Hay Forks, Snaths, Rifles, and other haying tools at manufacturers's prices, wholesale and retail.

Particular attention is called to a NEW PLOW, which is believed to be the best cast iron Plow ever offered, and which is warranted to do better work, with less expense of team, than any other Plow heretofore sold in Rochester—while the price is less than any other equally well finished.

The "uniform one-price cash system" will be adopted, with prices as low as the cost of articles, and just compensation for labor and time, will allow.

Farmers and others are invited to call and examine the stock of Machines and Implements, and are assured that no effort shall be wanting to meet promptly the wants of a discriminating public.

☞ Circulars and Catalogues furnished gratis on application personally or by mail. E. D. HALLOCK,
June 1, 1853—tf No. 24, Exchange street, Rochester.

Garden and Field Seeds,

FROM the new establishment of VANZANDT & BOWDISH, No. 114 State street, Rochester, N. Y., can be purchased of the merchants generally throughout the country, in papers or packages, on reasonable terms. Also, at the Agricultural Warehouse of E. D. HALLOCK, No. 24 Exchange street, Rochester, N. Y.

The Seeds from this establishment can be relied on as being of the best quality. They are mostly imported, or grown for us by the *Eastern Shakers*, and are warranted good and true. Full directions for cultivation printed on each paper and package.

VANZANDT & BOWDISH.
Rochester, May 1, 1853.

Cochin China Eggs for Sale.

THE subscriber has the best collection of Cochin China fowls in the State, and, perhaps, in the country—so stated by those who have seen them. They obtained the first premium at the Monroe County Agricultural Fair last fall. My stock was obtained from J. VICK, JR., one of the editors of the *Farmer*, and are pure and exceedingly fine.

I will sell eggs from these fowls, nicely packed, and forward by express, or in any way directed, for $4 per dozen.

MILES DECKER,
April, 1853. Rochester, N. Y.

The Stowell Ever Green Sweet Corn.

A QUANTITY of this new and valuable variety, from seed raised by Professor J. J. Mapes, LL.D., for sale. Per bushel, $16; peck, $5; half peck, $3; quart, $1; sent by express or mail to any part of the country, on receipt of the money by post. This is beyond all doubt the best and most prolific kind of Sweet Corn ever grown. No farmer should be without it. With ordinary care it will repay cost a hundred times over the first season.

DIRECTIONS.—A quart of seed will plant one-tenth of an acre, four to five kernels to the hill. Prepare ground well. Cultivate like common corn. It may be planted any time before the middle of June; earlier the better.

[From the Working Farmer.]

"We have long been convinced that sweet corn would prove superior as green fodder to any other; and the only objection urged against its use has been the smaller yield per acre compared with other kinds. We are now prepared to recommend the use of Stowell's evergreen sweet corn for this purpose. The stalks are nearly as sweet as those of sugar-cane, and *double the quantity* can be grown to the acre, to that resulting from ordinary sweet corn."

Another advantage claimed for this corn by Prof. Mapes, though the subscriber does not endorse it, is, that when desired, it may be kept *green and fresh all the year round.*

[Professor Mapes, in the "Working Farmer," gives the following directions for preserving the Stowell Ever-green Sweet Corn:]

"The ears should be gathered when fully ripe, and the husk should be tied at the nose (silk end), to prevent drying, when *it will keep soft, white and plump for more than a year*, if in a dry and cool place. At the dinner of the Managers of the Fair of the American Institute, last year, we presented them with this corn of two successive years' growth, boiled, and there was no perceptible difference between the two. This year we sent to the Fair one stalk containing eight full and fair ears, and could have sent many hundred stalks of six ears each."

Many other recommendatory notices might be given.

All orders promptly supplied. Address, post-paid, ALFRED E. BEACH, White Plains, Westchester Co., N. Y.
May, 1853.—2t.

Employment for Young Men.—Book Agency.

D. M. DEWEY, Arcade Hall, Rochester, has, during the past nine years, employed several hundred young men in the sale of books, and is now more extensively than ever engaged in the sale of good and valuable books by traveling agents. The following are a few of the books now offered:

Uncle Tom's Cabin, in paper, retail,	38
Sequel to Uncle Tom's Cabin, in paper, retail,	25
Key to Uncle Tom's Cabin, " "	50
Youatt on the Horse, the best work on the Horse,	$1 50
Barry's Fruit Garden, the best work on Fruits,	1 25
Life of the Empress Josephine, by Headley,	1 25
Dick Wilson, a new Temperance work,	1 25
The Australian Captain, a book of facts,	1 25
Chemical Field Lectures—Agriculture,	75

Bibles, New Travels, Histories, Biographies, Agricultural Books, Novels, Pamphlets, &c., &c., all of which are put to agents at the lowest cash prices—and agents are indemnified against loss. A small cash capital of from $15 to $30 will be required, and the agent can earn from $1 to $5 a day, depending upon his adaptation to the business.

N. B.—Orders for any Book wanted, with the price of the book enclosed, will be promptly answered by mail, and the book sent free of postage.

Subscriptions received for all American and Foreign Periodicals. Address D. M. DEWEY,
May, 1853. Arcade Hall, Rochester, N. Y.

Superphosphate of Lime.

OF the best quality, and various other Fertilizers, for sale at the lowest prices.

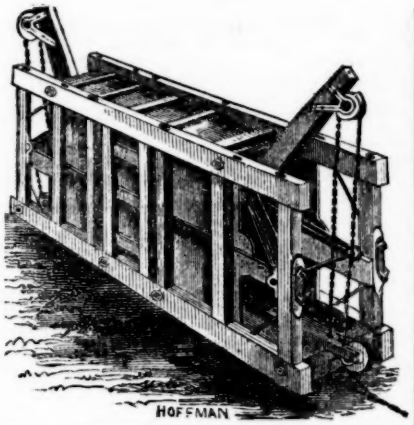
Plows, and all other Farming and Gardening Tools, and a large assortment of Field and Garden Seeds, of the best quality. R. L. ALLEN,
May, 1853—2t. 189 and 191 Water-st., New York.

PERUVIAN GUANO.

JUST received per ship Grecian, first quality Peruvian Guano.

No. 1 Superphosphate of Lime constantly on hand.

Agricultural and Horticultural Implements, and field and garden seeds, the largest and most complete assortment to be found in the United States. R. L. ALLEN.
June 1, 1853. 189 and 191 Water street, New York.



H. L. Emery's Newly Invented Double, Toggle-Jointed, Horizontal, Progressive Lever Hay and Cotton Press.

PROBABLY no one thing has been more wanted, and less improvements made upon it of late years, than the Hay Press. Notwithstanding this was completed quite late the past season, a large number were made and put into successful operation. As seen in the cut it is closed up and about midway in process of compressing a bundle of Hay. When fully pressed home, the ends of the levers, which are seen at each end extending above the box, are brought down by the chains or ropes and shelves, until the levers themselves become horizontal with the floor. The Press is provided with two followers, both working from the ends towards the center and each other. The chains or ropes from the levers are connected together by passing one of them under the machine and both joining in a larger chain or rope—this larger one being connected with a capstan or blocks and ropes, as most convenient.

When the Press is driven home, the hay becomes pressed into a bundle standing on its end. The side doors are thrown open while the bands are passed round the bundle and secured, when the top doors are loosened and the bundle thrown out. For operation, the levers are raised, the followers drawn back, and the top doors opened from the center to each end by unbuttoning the middle cross bar, as seen in the cut. The opening on the top for receiving hay, is 2 feet wide and 8 feet long. The Press stands upon the floor or ground when in use, which makes it both convenient and capacious for filling and treading in the hay.

The whole Press measures 14 feet long, 2 ft. 10 in. wide, 4 ft. 10 in. high, outside measurement, and weighs, complete, from 1200 to 1500 lbs., and is capable of compressing 250 lbs. of Timothy Hay into 16 cubic feet, (being 2x2x4 ft.) at the rate of five bundles per hour, with two men and one horse, and heavier bales in proportion as to size and time required.

For transportation, the inside work is readily removed and boxed up, while the sides are packed together making solid cubic measurement of the whole thing.

Price complete, with chains and capstans, $135, and warranted to work as represented, to the satisfaction of the purchaser.

I will, in a future number, give a further notice in detail, with more cuts illustrating its several parts detached.

For further particulars address H. L. EMERY,
April, 1853. Albany, N. Y.

Premium Dahlias.

THE subscribers offer for sale this Autumn and the ensuing Spring, 10,000 Dahlia Roots, which have proved to be the choicest collection in the States and Canadas. [See records of the Fairs for the last four years.]

Persons commencing the Nursery business, and Amateurs, will find it to their advantage to give us a call, or make enquiries before purchasing elsewhere.

C. J. RYAN & CO.,
Rochester and Charlotte Plank Road Nurseries, Rochester, N. Y. [11-tf]

EMERY'S MOWER AND REAPER.

THE subscriber, not only having made himself practically acquainted with the construction and working of all the successful machines of this class, but having made and successfully introduced several valuable improvements in some classes of agricultural machinery, which have already gained favorable and world-wide reputation and adoption, flatters himself that he has also made an improvement in the construction of a Mower and Reaper of equal if not greater merit, than any of his former improvements.

It will suffice to say, that while this is the most compact, light, simple, cheap, durable, easy working machine, it is at the same time the most perfectly adjustable, and easily convertible into a Mower or Reaper, working as perfectly in either form as those of the best other kinds, whether simple or combined. The frame itself is so suspended upon the axis of the main wheel, as to be elevated and depressed at pleasure, so as to secure a horizontal or inclined (forward or back) position of the whole machine, at whatever elevation used, thus always having the cutting works in proper positson.

In reaping, a reel is used, and the raker stands erect, face forward and directly behind the platform, with a support about him; the movable platform being on the same plane with the frame-work at the side of the discharge, and at the same time about two inches above the stubble. With the above introduction, and the dingrams to follow, together with those in this number of the Genesee Farmer, the public will have before them several machines from which to make a selection before purchasing for the coming season, and at the same time know what they are purchasing, much better than to be guided alone by impracticably written and published reports of committees of public trials, and be enabled to purchase only such articles as have their practical as well as theoretical merits plainly pointed out, or if not so pointed, to purchase only of responsible manufacturers, who are willing to back their machines by their reputation and capital.

For further particulars concerning the Reaper and Mower above described, address

HORACE L. EMERY, Albany, N. Y.
March, 1853.

☞ E. D. HALLOCK, No. 50 State street, Rochester, is agent for Western New York, and will have one put up in running order in his store. Those in his vicinity wishing to obtain a Reaper and Mower, are requested to call and examine the merits of the above machine before purchasing elsewhere.

Patent Mammoth Premium Corn-Stalk, Hay, and Straw Cutters & Grinders.

CAPABLE of preparing 100 bushels of Corn-stalks, or One Ton of Hay or Straw, per hour, and reducing the largest Corn-stalks to the consistency of Cut Straw, avoiding the necessity of steaming or soaking, and saving 80 per cent. over the common way of feeding fodder. Horses and Cattle will do as well on fodder prepared this way, as on the best hay. The First Premiums have been awarded at every exhibition where they have been exhibited for competition. It can be worked by hand or power, without additional cost. The inventor will forfeit $50, after an impartial trial, when this Machine is used in preparing good fodder, if it does not prove to save 80 per cent. over the common way of feeding fodder, and it may be fed in the same condition as the machine leaves it, without meal or soaking. Cows fed on fodder produce sweeter butter. Over 900 of these Machines have been sold. Price—$35.

☞ State and County Rights for sale.

Gilbert's Excelsior Thresher and Cleaner,

Accomplishing more, with the same power, than any other Machine. It can be driven with two horses.

Price—$200 and upwards, according to size, Horse Power included. Apply post paid to J. G. GILBERT,
[2-tf] 216 Pearl st., New York.

Manures.

FERTILIZERS of all kinds for sale by the subscribers.

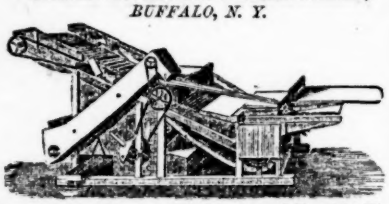
Improved Superphosphate of Lime, Superphosphate of Lime—both the above made after the recipe of Prof. Mapes.

Peruvian Guano, Sulphuric Acid, Bone-dust, Potash Sparlings, Poudrette, Plaster of Paris, &c. &c.

GEO. H. BARR & CO.
53 Cortland St., New York.

Northern N. Y. Live Stock Insurance Company, Plattsburgh, N. Y. For terms, please apply to agents of the Company.

AGRCULTURAL IMPLEMENT MANUFACTORY,
CORNER OF CAROLINE & THIRD STREET,
BUFFALO, N. Y.



Pitts' Patent Separator—Improved Double Pinion Horse Power—Pitts' Corn & Cob Mills, &c.

I HEREBY give notice that since the extension of the patent right on my Machine for Threshing and Cleaning Grain, I have removed to Buffalo, N. Y., where I have permanently located, and erected a large establishment for the future manufacture of the above Machines.

The Separator has been enlarged, improved, and rendered more permanent and durable in all its parts, while the Horse Power for strength, ease, durability and cheapness of repair is not surpassed by any in the United States. This Power is warranted to stand the full strength of eight horses—also to give as much effective or useful power when driven by one or two horses as any other Horse Power, whether constructed on the endless chain or lever principle. It was put on trial at the great exhibition of Horse Powers and Threshing Machines at Geneva, July last, 1852, where it received the New York State Agricultural Society's First Premium "for the best Horse Power for general purposes." The Separator, at the same trial, also received the Society's First Premium.

My Machines will thresh and clean from three to five hundred bushels of wheat per day, and other grain in proportion.

Two hundred of the above Machines are for sale at the Agricultural Works of the subscriber in this city, all warranted to be a better article than can be purchased at any other shop, and if they do not prove on trial to be so, I will take them off the hands of the purchasers at the price they may pay me for them.

I further notify all persons who are purchasing Horse Powers and Separators to be used in California or Oregon, that I will hold them accountable for any infringmants of the rights secured to me by letters patent in the above Machines, as I am manufacturing a Horse Power and Separator expressly designed for that section.

All orders for the above Machines hereafter addressed to JOHN A. PITTS, Buffalo, N. Y., will receive prompt attention.

JOHN A. PITTS,
May, 1853—tf. Buffalo, N. Y.

Imported Horse, "Consternation."

THIS thoroughbred horse has been so often exhibited at the Fairs of the New York State Agricultural Society, and always without a rival, that it is unnecessary either to describe or praise him. Six or seven of his colts, of various ages, were shown with him at Utica last fall. Two of them received first premiums, and all of them were greatly admired. Many of them, now four and five years old, are owned in Oneida county. Any person may be convinced of their great superiority by inquiring of almost any farmer or horseman in the towns of Rome, Lee, or Western. His colts and fillies are already in demand for breeding. Several have been sold during the past winter, at handsome prices, to go out of the State.

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The following letter from Lowell Mason, Boston, to G. P. Reed, we are permitted to use:

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